



cloud
strategy
day

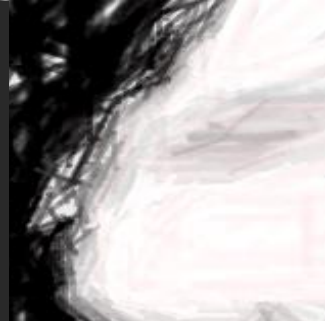


“How the Microsoft cloud enables the best App experiences across devices”

Beat Schwegler – beatsch@microsoft.com
Director, Platform Strategy Group, Microsoft Corp.


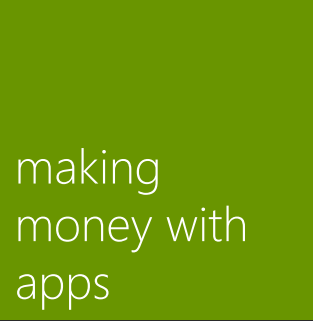
agenda



Microsoft's
devices and
services
strategy



making
money with
apps



cloud enabled
app scenarios
with Windows
Azure



key
architectural
considerations

chapter III

core cloud capabilities



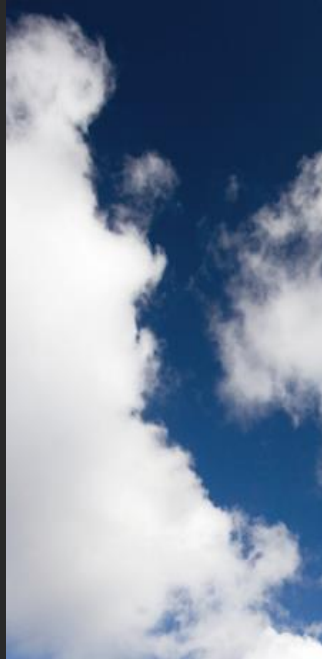
identity



application
persistency



push
notifications



inter-device
communication



backend
processing and
websites

core cloud capabilities



identity



application
persistency



push
notifications



inter-device
communication



backend
processing and
websites

spectrum of IT services





Microsoft cloud datacenters

Microsoft cloud platform



Windows Server

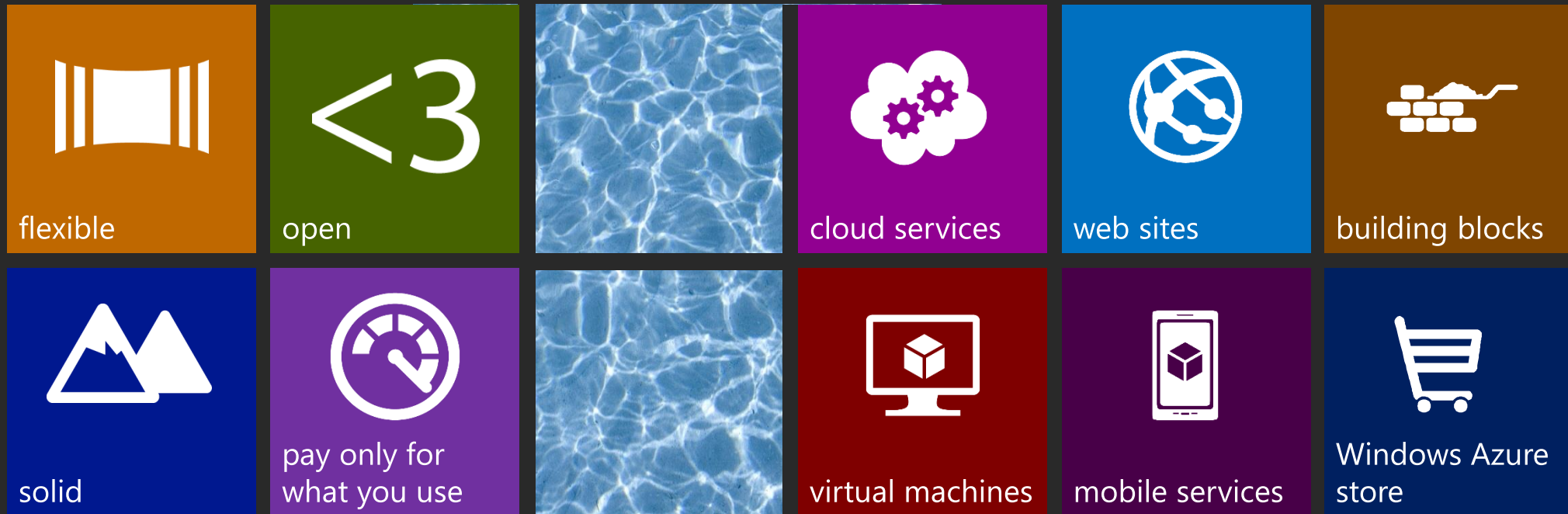
Active Directory
Hyper-V
.NET/node/php/java/...
Visual Studio
System Center



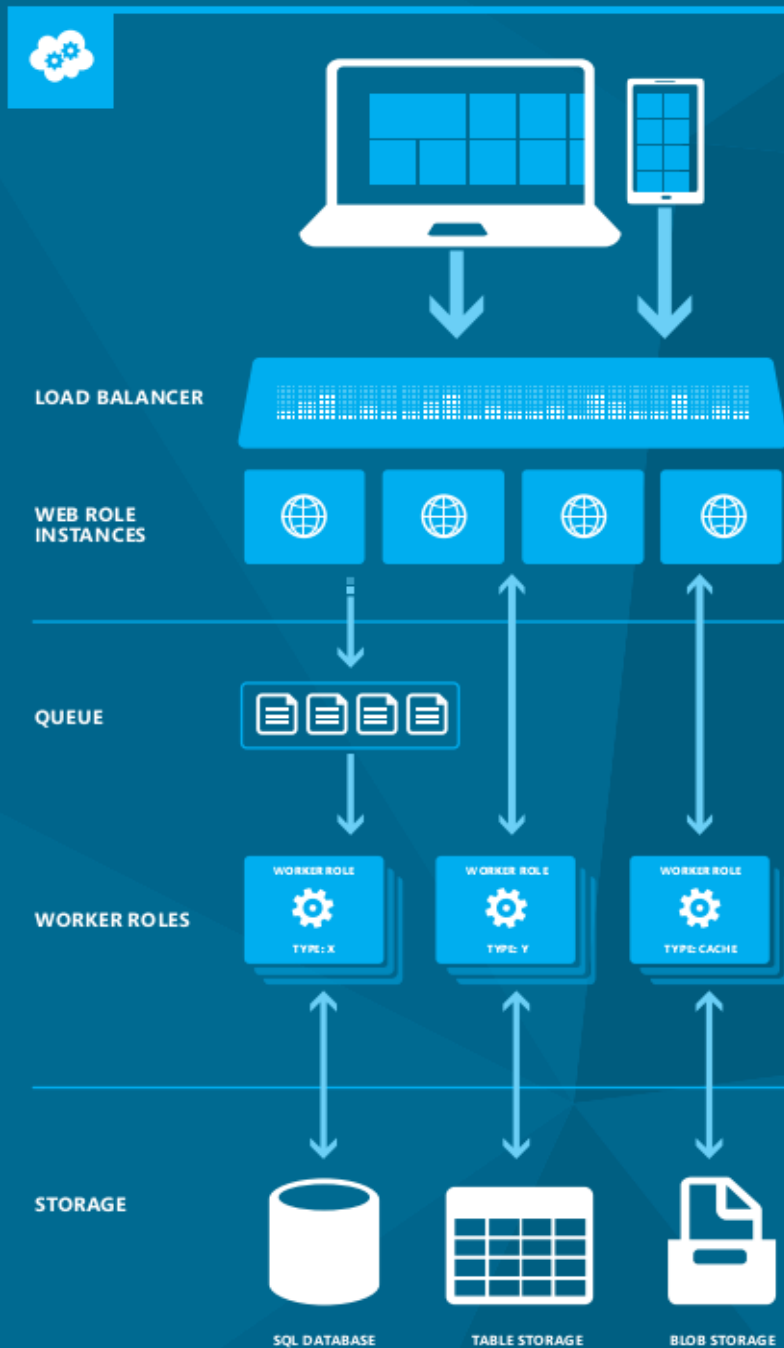
Windows Azure



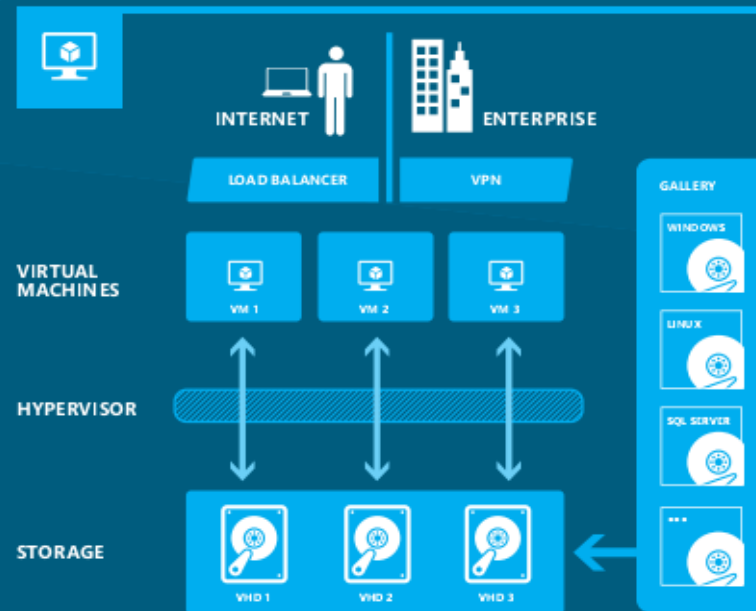
Windows Azure



CLOUD SERVICES

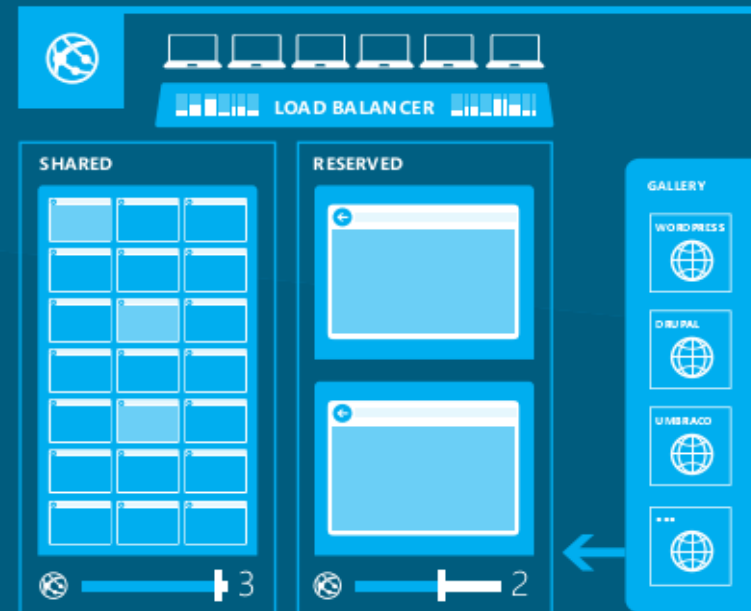


VIRTUAL MACHINES



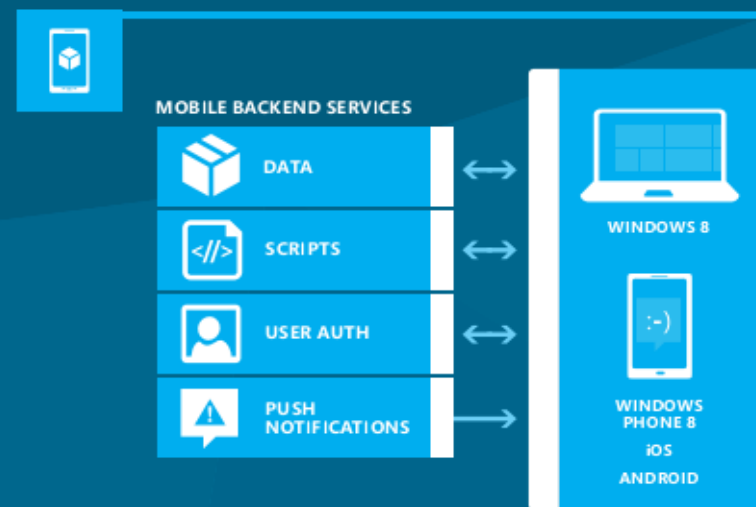
Virtual Machines can run both Windows and Linux operating systems. Create VMs from Virtual Hard Disk images stored as blobs. Create VHDs locally and upload them, choose from a stock gallery or modify a running VM and save the image to your personal gallery.

WEB SITES

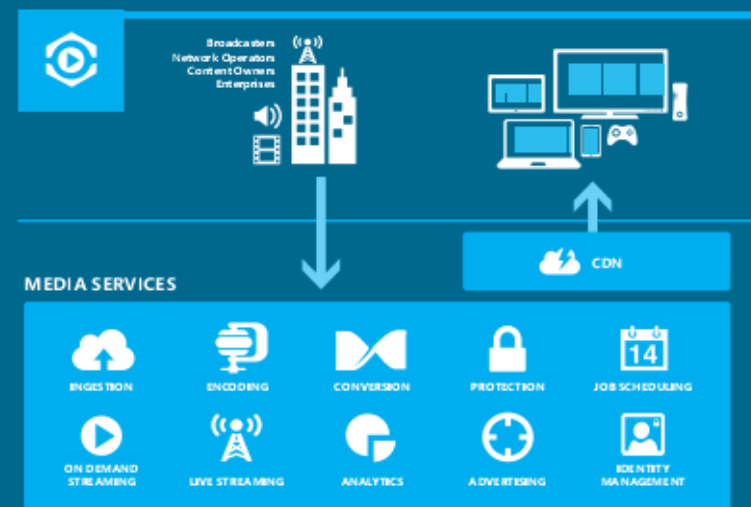


With Web Sites, you can share space in a VM or reserve an entire machine for your web site. You can create sites with both SQL Database and MySQL databases, as well as deploy popular open source software from a gallery. You can use the slider on the Windows Azure portal to scale out to more instances.

MOBILE SERVICES



MEDIA SERVICES



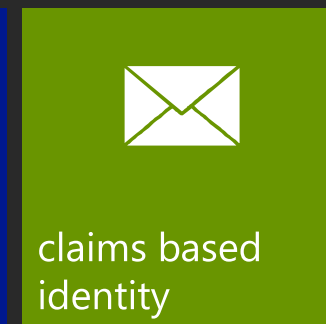
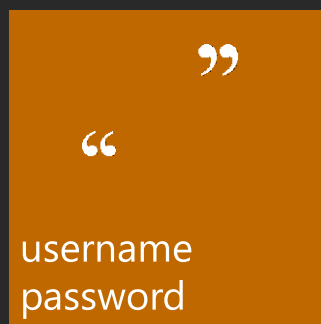
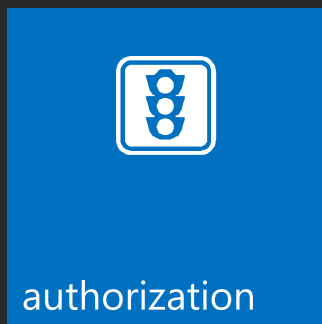
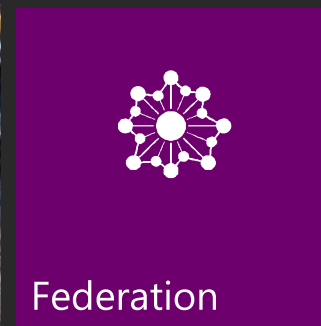
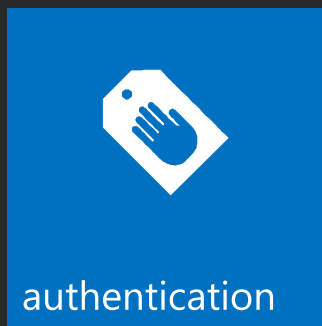


demo:
Windows Azure

core cloud capabilities



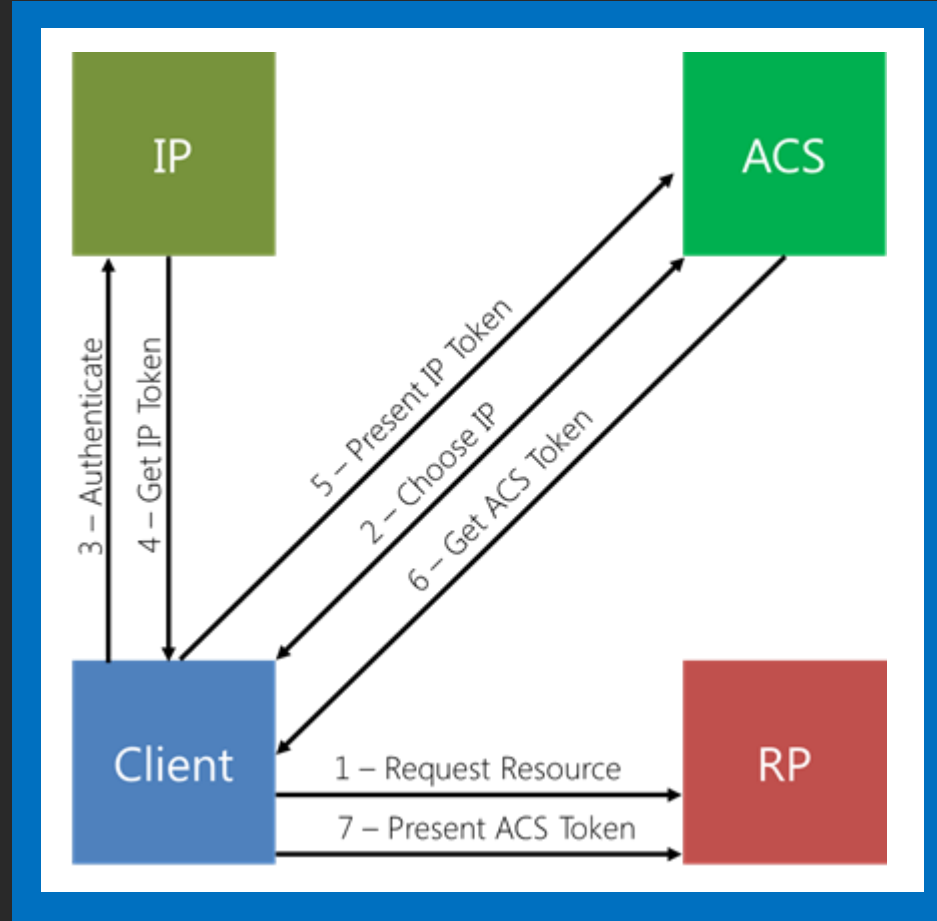
identity






demo:
Access Control
Service in
MargieTravel

Access Control Service (ACS)




Windows Azure Active Directory



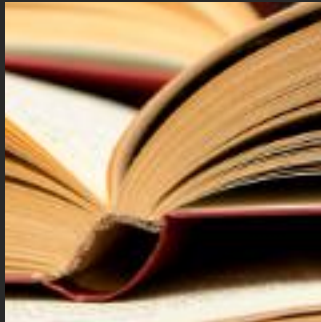
REST based
service in the
cloud



Microsoft Office
365, Dynamics
CRM Online,
Windows
Intune...



single sign on
across cloud
applications



cross company
social
connections



core cloud capabilities



identity



application
persistency



push
notifications



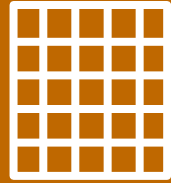
inter-device
communication



backend
processing and
websites

storage options

tables



non-relational structured storage
massive scale-out



blobs



big files



queues



persistent async messaging
enqueue, dequeue

SQL
database

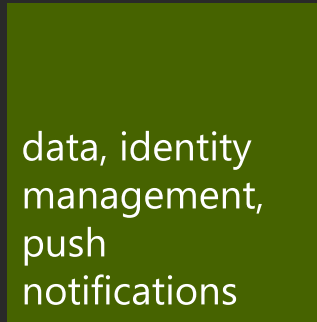
relational database
highly available
managed for you as a service




Windows Azure mobile services



easily build
cloud back-ends



data, identity
management,
push
notifications



Windows 8,
Windows
Phone, iOS





demo:
Windows Azure
Mobile Services

big data basics

move compute to data



Microsoft big data solution

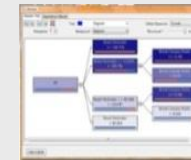
familiar end user tools



Power View



Excel with PowerPivot



Predictive Analytics



Embedded BI

bi platform



SQL Server Analysis Services



SQL Server Reporting Services



Hadoop On Windows Azure



Hadoop On Windows Server

Connectors



Microsoft Enterprise Data Warehouse

unstructured and structured data



Sensors



Devices



Bots



Crawlers



ERP



CRM

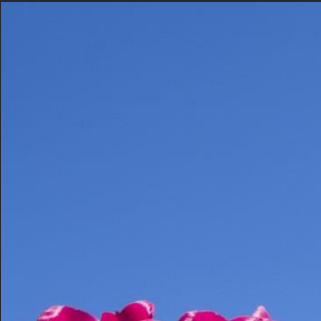


LOB



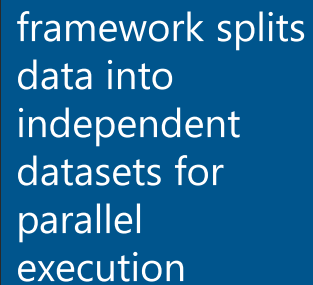
APPs

MapReduce

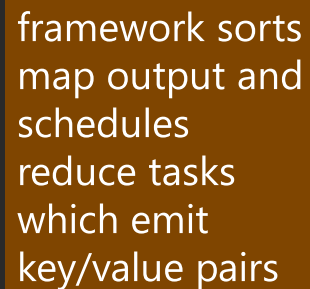


framework
schedules map
tasks to process
input and
generate
key/value pairs

```
var map = function (key, value, context) {  
  var words = value.split(/^[a-zA-Z]/);  
  for (var i = 0; i < words.length; i++) {  
    if (words[i] !== "") {  
      context.write(words[i].toLowerCase(), 1);  
    }  
  }  
};
```



framework splits
data into
independent
datasets for
parallel
execution



framework sorts
map output and
schedules
reduce tasks
which emit
key/value pairs

```
var reduce = function (key, values, context) {  
  var sum = 0;  
  while (values.hasNext()) {  
    sum += parseInt(values.next());  
  }  
  context.write(key, sum);  
};
```


A black and white painting of a person, possibly a woman, standing in a winter landscape. The person is wearing a heavy, light-colored coat and a hat, and is looking down. The background features a stone wall on the left and a dense, dark forest of bare trees on the right. The overall style is impressionistic, with visible brushstrokes and a high-contrast, somewhat somber mood.

demo:

Windows Azure
big data

core cloud capabilities



identity



application
persistency



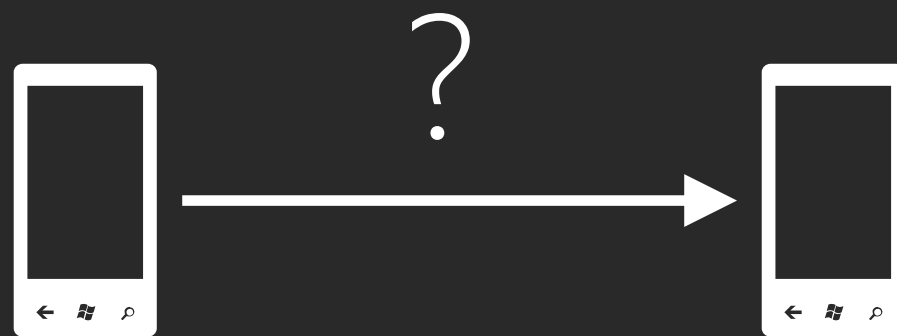
push
notifications



inter-device
communication



backend
processing and
websites



push notifications

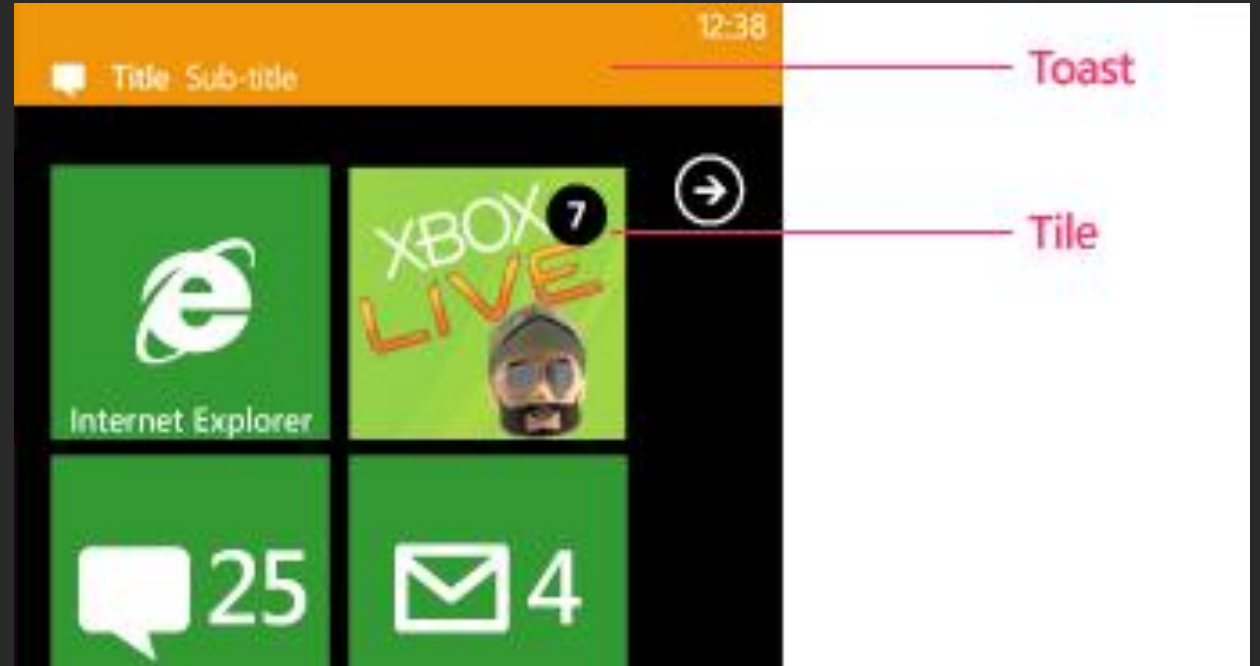
single
connecting
between the
device and the
notification
service



bandwidth- and
battery-friendly



no guarantee of
delivery



subscribing to push

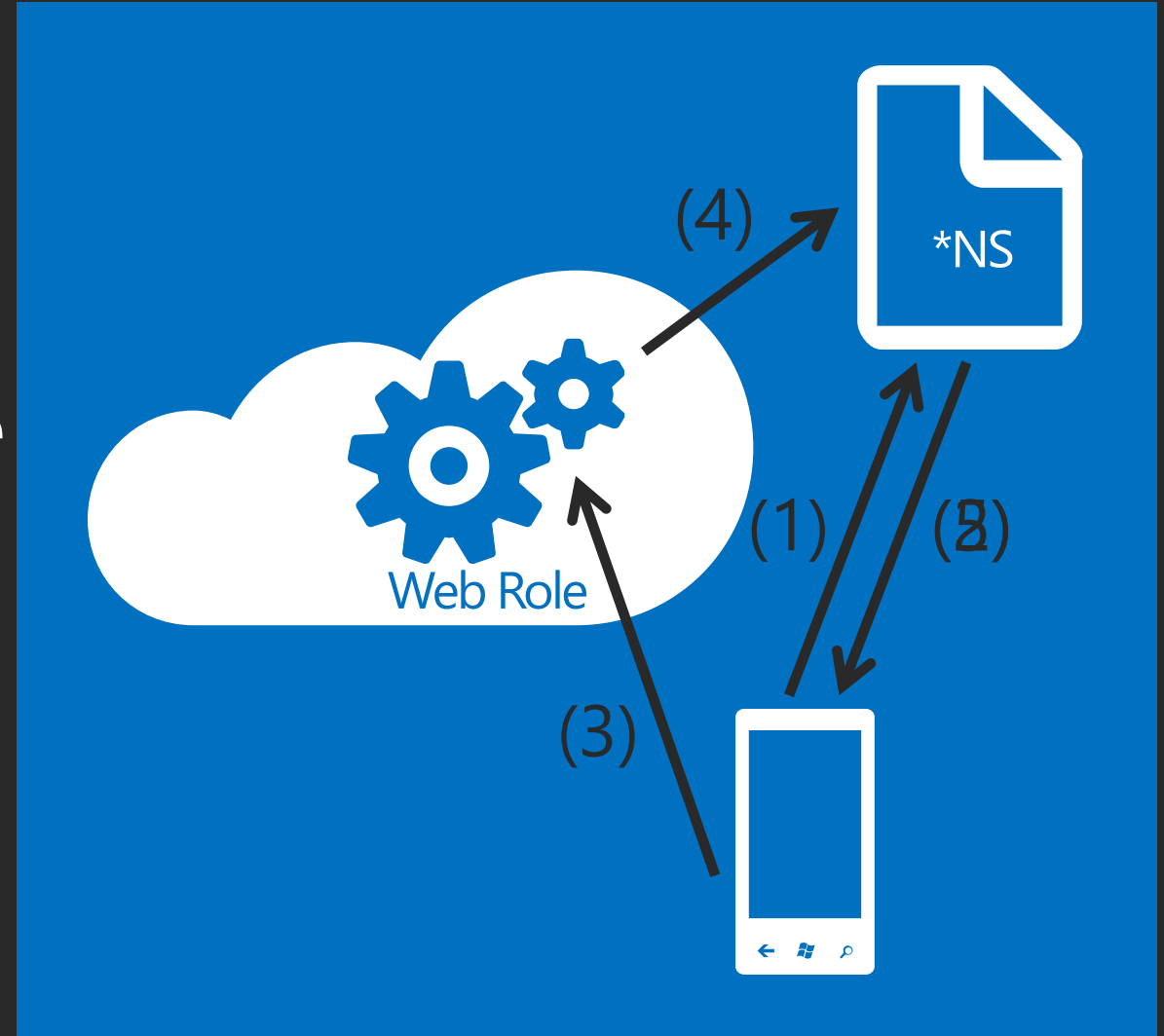
(1) device requests a channel
requesting app uses push client platform

(2) *NS returns channel

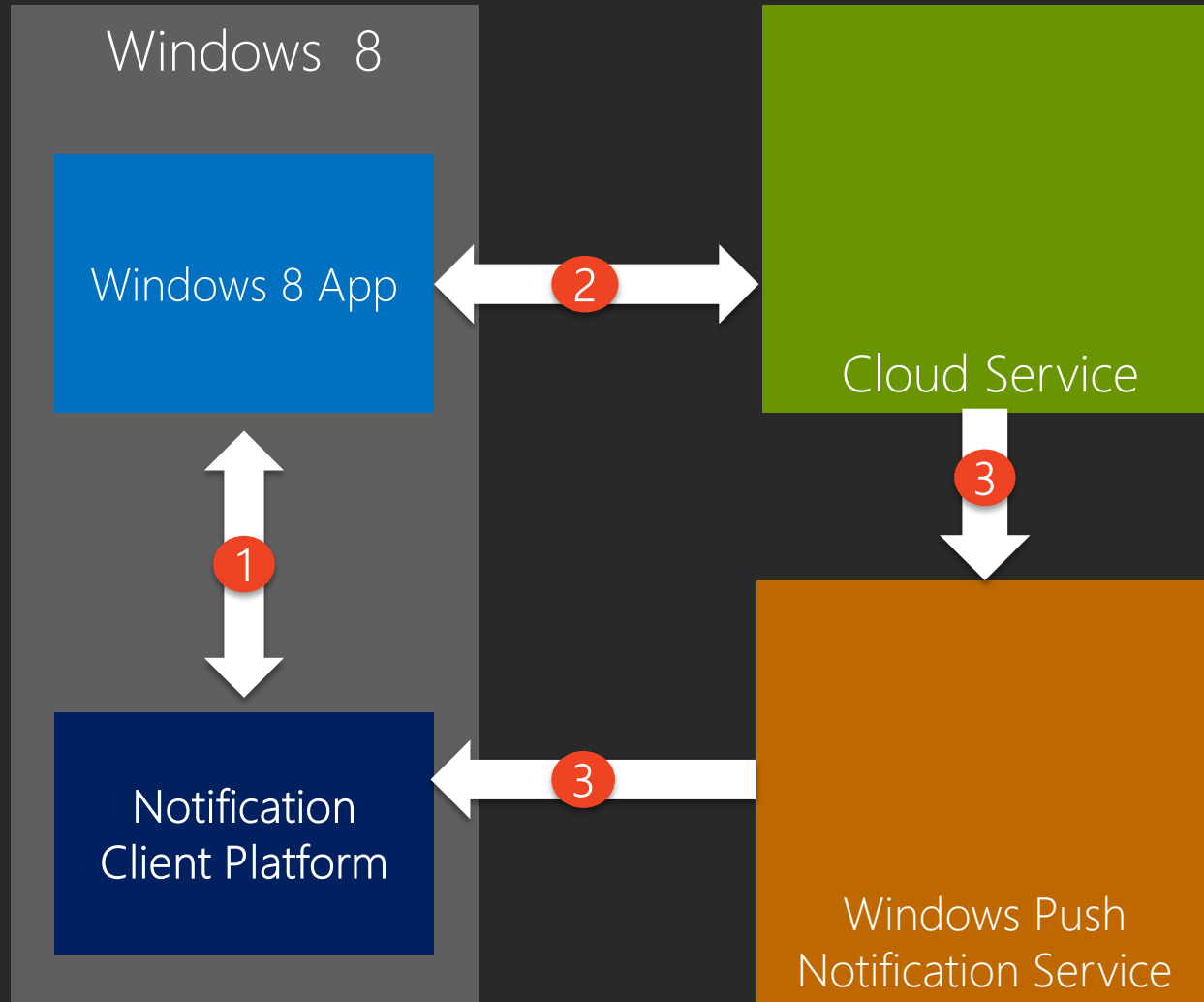
(3) device sends URL to service
Channel URL is stored in cloud

(4) service sends notification

(5) *NS pushes to device



overview push notification Windows 8



(1) request channel URI

(2) register with service

(3) authenticate & push notification

different platforms – different services



Windows 8

Windows Push Notification Service (WNS)



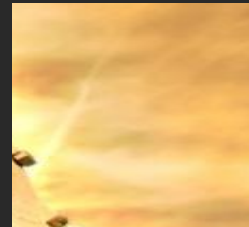
Windows Phone

Microsoft Push Notification Service (MPNS)



iOS

Apple Push Notification Service (APNS)



Android

Cloud To Device Messaging (C2DM)

core cloud capabilities



identity



application
persistency



push
notifications

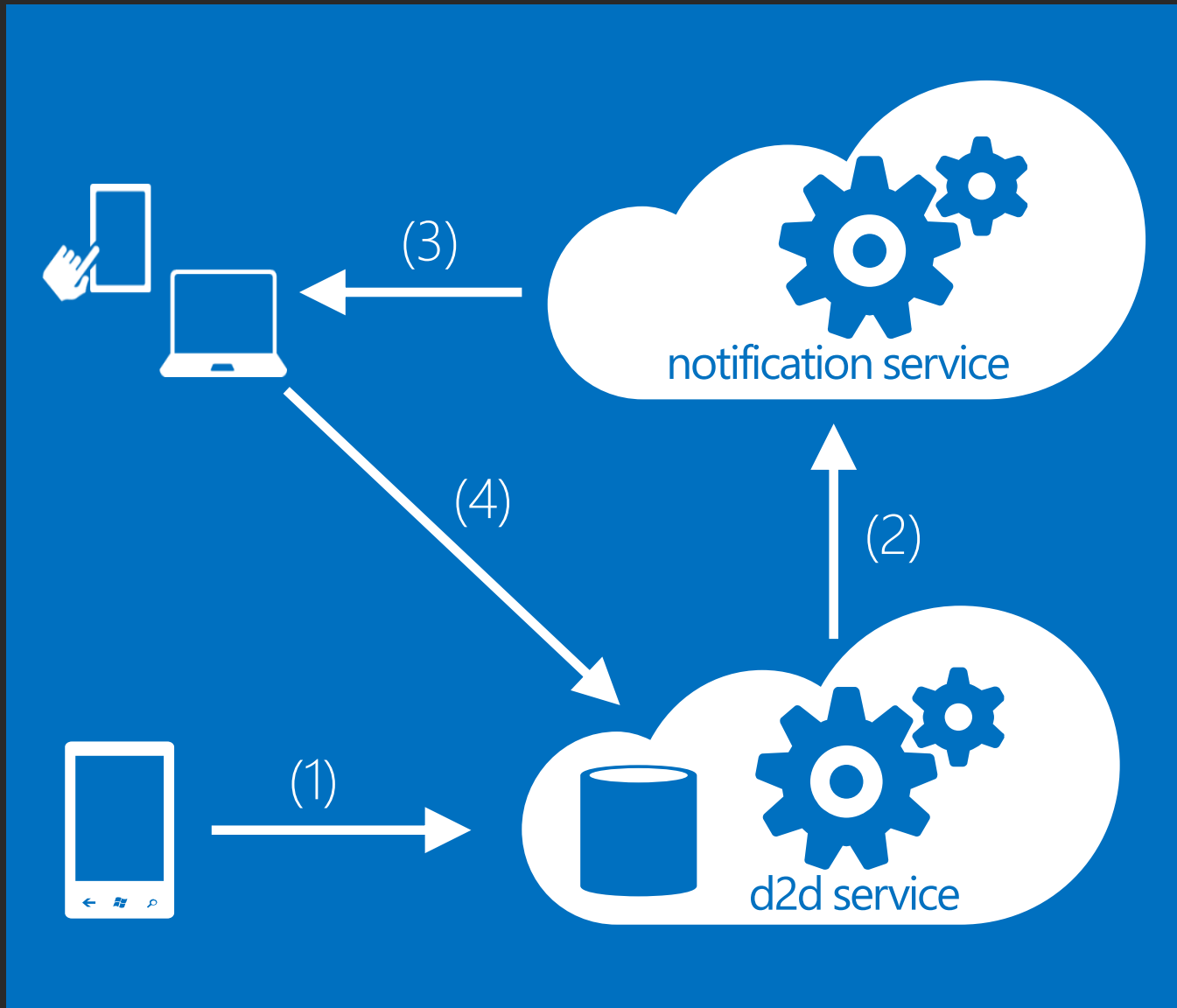


inter-device
communication



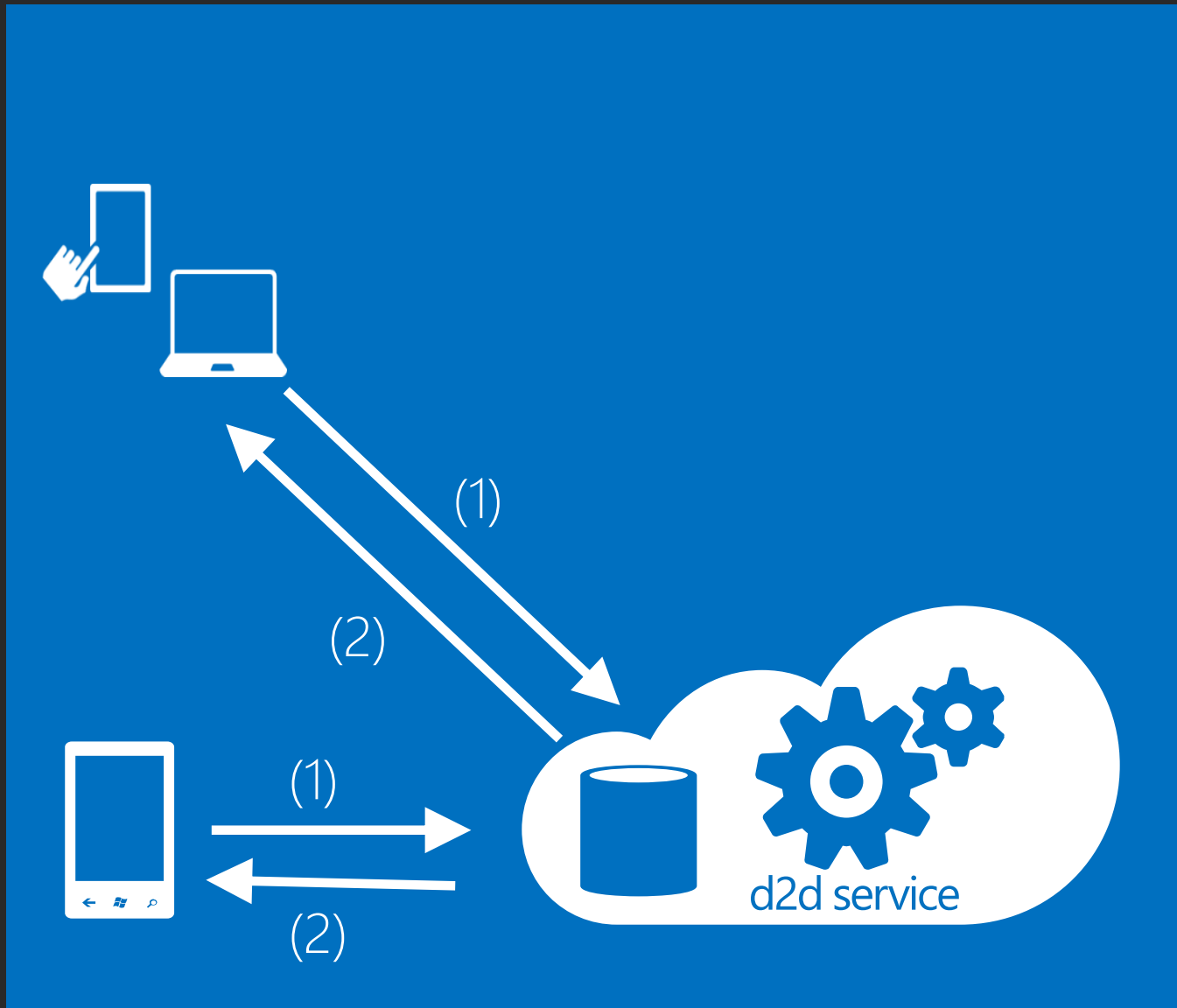
backend
processing and
websites

device to device communication



- (1) device initiates data share
- (2) d2d services stores data and requests push notification for target device(s)
- (3) *NS notifies device(s)
- (4) device retrieves data from d2d service

device to device communication



- (1) Establish duplex communication channel (WebSocket/SignalR)
- (2) server pushes data to client

conclusion



the cloud enables core App capabilities

Windows Azure is Microsoft's cloud platform



it provides 1st class PaaS & IaaS

and is open

