Cloud Perspectives

Function Point Analysis Clarifies a Cloudy World

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Agenda

Introduction
- Historical Perspective
- Cloud Rental Model
- Models and Standards
- Function Points in the Cloud
- Questions and Directions
Cloud Activity & Metrics

- IFPUG – Cross Contributions & Collaboration
- NIST – National Institute of Standards for Technology
- OMG CSCC (Object Management Group)
- ITU–T (United Nations)
- TM Forum
- Canadian Cloud Council
- Cloud Commons & Carnegie Melon U
- Shared Services Canada
- Many others!
Accelerate time-to-value and manage risks for cloud computing

Governments
Financial Sector
Telecom Sector

Mobile Community
Small Medium Business
Social Media
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How We Changed

- Typed Text
- Word Processing Machines
- Rotary Phones
- 8 Track Tapes
- Blockbuster
- Nortel
- Kodak
- Virgin Records
- Magazines
Since 1979

- Mainframe
- Mini
- PC
- Client/ Server
- WEB
- Devices
- Smart Phones
- Virtualization
- Cloud Computing
Social Media, Now Generation

Careers with the Canadian Coast Guard

“Salut Primum, Auxilio Semper”, the Latin motto for the Canadian Coast Guard (CCG), translates to “Safety First, Service Always”. From coast to coast to coast, the women and men of our agency provide the people of Canada with essential services on our lakes and oceans, as well as on land. The CCG provides services such as aids to navigation, icebreaking,
Basic framework remains valid and is actually part of most Enterprise Architecture models

- Boundaries
- Data
- Functions
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The Rental Model
My Rental

Rent

Buy

Public Transit

Lease
My Rental Experience

- Economy Car
- Without Air
- Unlimited Mileage
- Automatic
  - €21.74/ Day
  - 4 Days
  - Taxes Fees €43.52
  - Total €130.48

- €21.74/ Day
- 4 Days
- Taxes Fees €43.52
- “Total” €130.48
- Ireland Insurance
- N. Ireland Insurance
- Airport Fee
- Actual Total €323
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Three Service Models
- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)

Four Deployment Models
- Private cloud
- Community cloud
- Public cloud
- Hybrid cloud

Five Essential Characteristics
- On demand self-service
- Broad network access
- Resource pooling
- Rapid elasticity
- Measured service
NIST Reference Architecture

Cloud Consumer

Cloud Provider

Service Layer
- SaaS
- PaaS
- IaaS

Resource Abstraction and Control Layer

Physical Resource Layer
- Hardware
- Facility

Cloud Service Management
- Business Support
- Provisioning/Configuration
- Portability/Interoperability

Security
Privacy

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ITU-T Function Reference Architecture

User Layer
- User Function
- Partner Function
- Administration Function

Access Layer
- Endpoint Function
- Inter Cloud Function

Services Layer
- SaaS / CaaS
- PaaS
- IaaS
- NaaS

Service Orchestration

Resources Layer
- Resource Orchestration
- Pooling and Virtualization
- Physical Resources

Cross-Layer Functions
- Management
- Security & Privacy
- Cloud Operational Function
- Cloud Availability Function
- Monitoring & SLA

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Where’s the Boundary!

- Review objectives & goals
- Use other reference architectures and cloud eco-system models to generate discussions
- Business application boundaries
- Middleware boundary approaches
- IaaS and PaaS can be initiated by a “user” or “machine” (even a higher level service SaaS for example)
ITU-T Business Application Boundary

Cross-Layer Functions
- Management
- Security & Privacy
- Cloud Operational Function
- Cloud Availability Function
- Monitoring & SLA

Layer Functions
- User Function
- Partner Function
- Administration Function
- Endpoint Function
- Inter Cloud Function
- Service Orchestration
- Resource Orchestration
- Service Orchestration
- Pooling and Virtualization
- Physical Resources
- SaaS/CaaS
- PaaS
- IaaS
- NaaS
ITU-T Middleware Boundaries to Clarify Components/ Middleware

User Layer
- User Function
- Partner Function
- Administration Function

Access Layer
- Endpoint Function
- Inter Cloud Function

Services Layer
- SaaS/ CaaS
- PaaS
- IaaS
- NaaS
- Service Orchestration

Resources Layer
- Resource Orchestration
- Pooling and Virtualization
- Physical Resources

Cross-Layer Functions
- Management
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Services “Inverted L”

One Product Can Cross Services

- Business Facing Functions
- Development Platform Functions
- Infrastructure/Resource Functions

SaaS

Service Facing Functions

PaaS

IaaS

$200/FP

$800/FP

$60/FP

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Multiple Devices & Channels

- Check Flight Status
- Generate Boarding Pass
Case – Pay Friend

- Create, View Customer
- Create Pay Product
- Customer can make a purchase
- Generate Code for Button – in HTML
- Copy/Paste HTML Code into Web Page
- Dynamically request more storage due to customer purchases made
- Customer requests more storage due to product information
End Consumer Makes a Purchase (EI)
Create Customer (EI)
View Customer (EQ)
Create Pay Product (EI)

Services Layer

SaaS

Resources Layer

Resource Orchestration
Pooling and Virtualization
Physical Resources

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Generate HTML Code for Pay Button

Developer service, not the end consumer
PI to generate HTML, also updates/ retains ILF
(copy/ paste operating system provided function)
End Consumer Makes a Purchase (EI)

Based on a trigger, automatically requests additional storage to be provisioned using an IaaS service if needed.
Customer Requests More Storage (EI)

Based on a customer request, additional storage is provisioned using an IaaS service.
Where’s the Data?

- Although the data (ILFs & EIFs) are physically stored within “physical resources” they can be logically categorized within the Service Models (IaaS, PaaS, SaaS)

![Diagram showing IaaS, PaaS, SaaS, and NaaS with related labels: Customer, Product, Purchases, HTML “Button Code”, or optional RET of Product, and Infrastructure Allocations.]

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Cloud Function Point Hints

- Use industry frameworks to gain perspectives
- Need context “of what” – “why” and “decisions”
- Boundaries and accountability are key
- Count using the IFPUG rules and “whitepapers” such as middleware
- Categorizations of functionality help provide context (customized, configured, Service Models, etc)
- Logical data perspectives vs physical
Cloud Function Point Hints (continued)

- Use IFPUG method as a framework
- Categorized productivity and performance baselines for pricing
- Use measurement well, not rigidly – local guidelines & extensions
- Functional analysis provides valuable perspectives, it’s not just the number
- Cloud impacts pricing and costing
- Still learning, it’s new! (no golden answer)
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Based upon user recognizable functionality using IFPUG!

Goal – Reduce Costs of ICT Development, Maintenance and Time-to-Value

○ 16 Month traditional development (time to value) schedule reduced to 60 days
○ Total Cost of Ownership (development, enhancements & maintenance) for 10 year period reduced from $4 million to just over $1 million
Cost Calculations

- Existing costs / chart of accounts
- Cloud costs / chart of accounts
- Migration Strategy
- Migration / Conversion estimates
- Education / Business Processes
- Risks
- Value / Opportunities
Market Terms

CLOUD COMPUTING
VIRTUALIZATION
BIG DATA
Function Point Analysis and Good Measurement

Provide Comfort and Increased Trust While “in the Clouds”

Obrigado!

Want to participate & get involved?  steve@cloud-perspectives.com