RED HAT SUMMIT

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Transforming Government IT:
Stories & Lessons from the U.S. Public Sector

Moderator:
Ted Brunell - Senior Solution Architect / DoD Cloud Specialist, Red Hat, Inc.

Panelists:
Jeremy Gerdes - Senior Systems Engineer, Onpoint Consulting, Inc.
John Keese - Director Of Government Cloud Services, CSC
Justin Marston - Chief Executive Officer, Hypori
Massimo Perreca - Chief Architect, CSC

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Jeremy Gerdes
RHCE, RHCVA, RHCDS, RHCA Level III
Senior Systems Engineer
Onpoint Consulting, Inc., a wholly-owned subsidiary of
Sapient Government Services

John F Keese

Director Of Government Cloud Services, CSC

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Leads CSC NPS Cloud Center of Excellence

- Responsible for all cloud services
  - That require FedRAMP and DoD security accreditation
- Manages
  - Cloud security, engineering and support operations
  - Technology partner relationships
  - Strategic Alliance with Red Hat Public Sector
  - Integrated Technology Center build out (near shore cloud managed services)
- Consults
  - With commercial entities wishing to meet FedRAMP and DoD cloud security standards for US Government use or for adoption of commercial best practices in cloud security
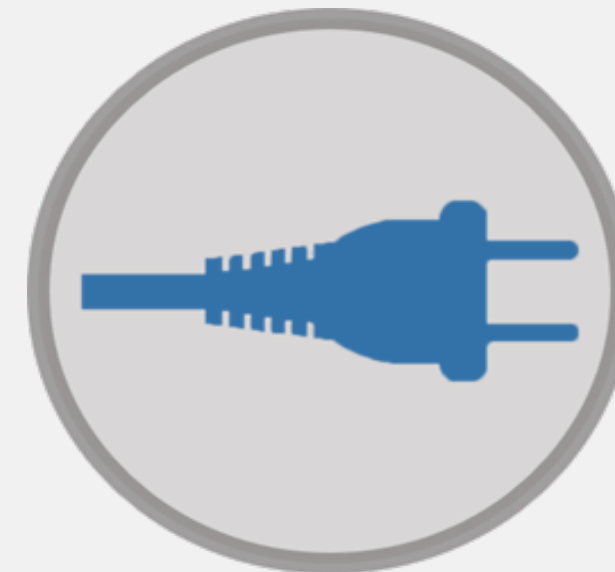
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CSC/ARC-P IaaS Offerings

ARC-P Community

The **ARC-P Community cloud service** provides for physical or virtual machines, as well as other resources. ARC-P is **a Red Hat Enterprise Linux and KVM** based cloud system. It assures interoperability and support for multiple hypervisor images. Agency virtualized images can be imported and exported from the ARC-P environment at agency request.

ARC-P On Premise

The **ARC-P On Premise** solution provides departments and agencies an on premise cloud solution with a self-service cloud platform for infrastructure management. Features include automated provisioning, charge-back and quota controls, workload portability between on premise, community and public clouds.

ARC-P Private

The **ARC-P IaaS Private cloud service** model provides for physical or virtual machines, as well as other resources. ARC-P is **a Red Hat Enterprise Linux and KVM** based cloud system. It also assures interoperability and support for multiple hypervisor images. Agency virtualized images can be imported and exported from the ARC-P environment at agency request.
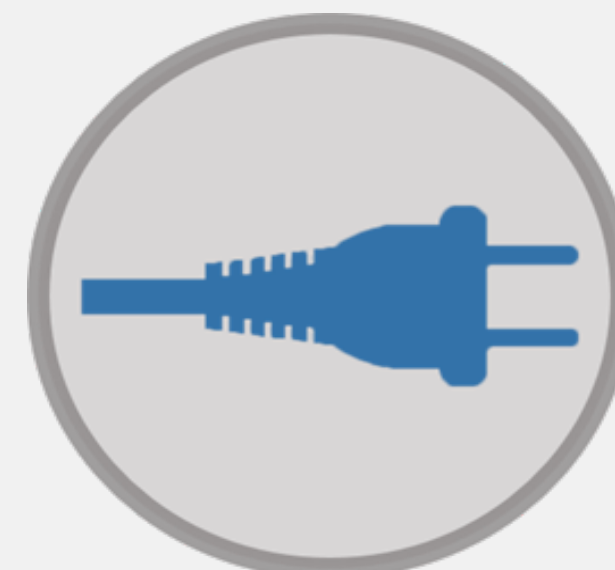
ARC-P Cloud Broker

The **ARC-P Cloud** solution will be complimented with the addition of a built-in cloud brokering platform extending cloud brokerage services to our government customers. Likely to be the first cloud broker platform that would run from and be an extension of a FedRAMP and DOD Impact Level1/2 authorized cloud platform.

CSC/ARCWRX PaaS & Service Offerings

ARCWRX

ARCWRX PaaS allows users to develop, host, manage, and scale applications in a FedRAMP accredited cloud environment*. By moving these technologies to the cloud, developers are not responsible for the underlying cloud infrastructure, security, or business continuity planning of the platform. Based **on OpenShift by Red Hat. In 2016 full Docker technology support will be included**

ARCWRX Mobile Application Platform

ARCWRX Mobile Application utilizes the ARCWRX PaaS and combines the **Red Hat FeedHenry** product. This platform will provide an enterprise grade Mobile Application Platform that accelerates the development of mobile projects by supporting collaborative app development and secure backend integration in the cloud.

ARC-P EMM/MDM

This offering is an extension of both the ARC-P IaaS and ARCWRX Mobile application development platform. Utilizing the **MobileIron solution set** for MDM /EMM will enable to secure delivery mechanism for the mobile application development environment.

ARC-P / CDMB Platform

The **ARC-P Cloud** solution will be complimented with the addition of a CDMB platform extending a ITSM and compliance dashboard based services for our DOD and security sensitive customers.
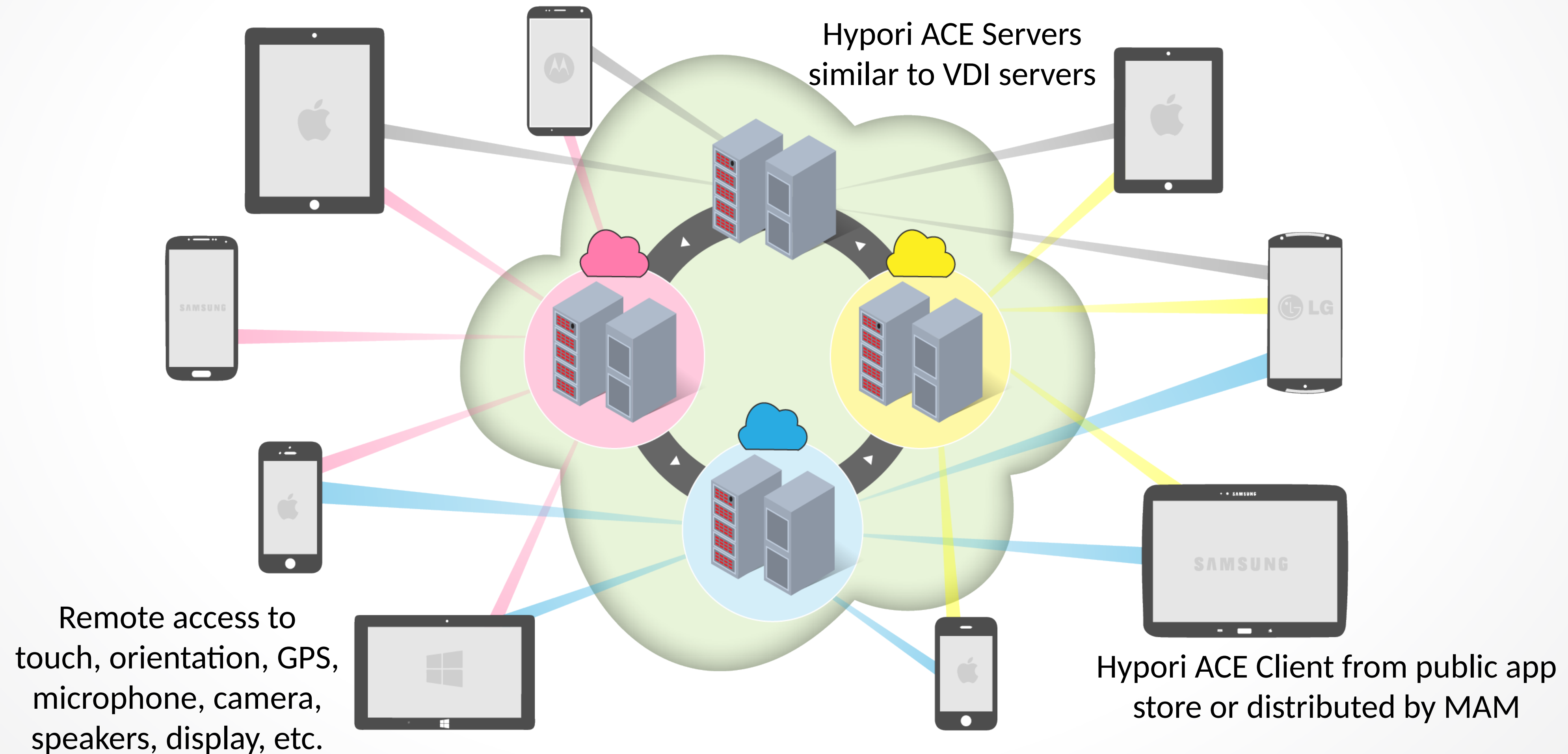
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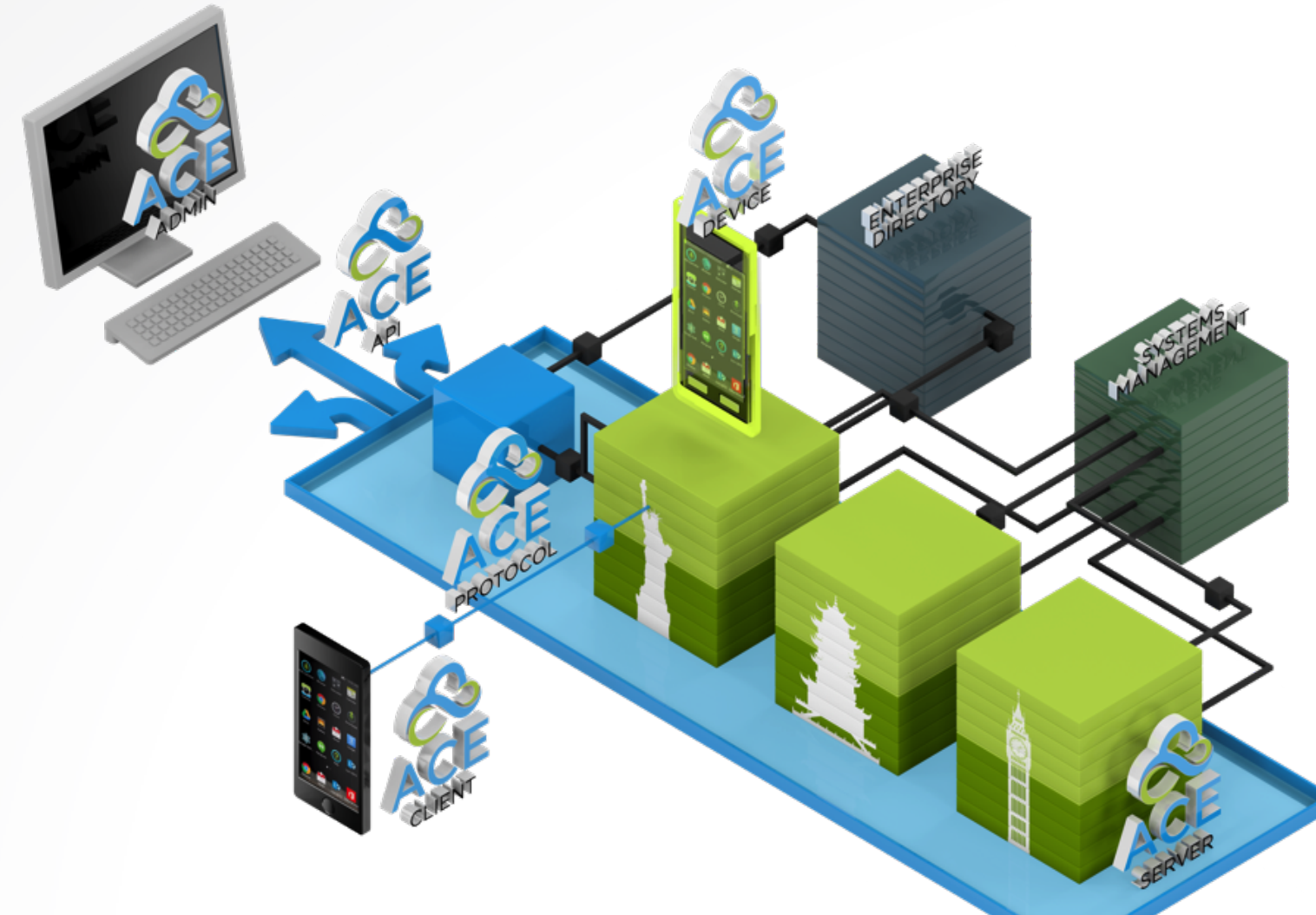
Justin Marston
CEO, Hypori

HYPORI

Android Cloud Environment

ACE
VIRTUAL redhat

Hypori Android Cloud Environment (ACE)

Host Android in the cloud, access via remote client apps:

Hypori ACE Servers
similar to VDI servers

Remote access to
touch, orientation, GPS,
microphone, camera,
speakers, display, etc.

Hypori ACE Client from public app
store or distributed by MAM

Product Overview

Client Apps for Android, iOS, Windows 8, ...

Hypori leverages SEAndroid as the ACE Device remote OS, as well as existing Android apps.
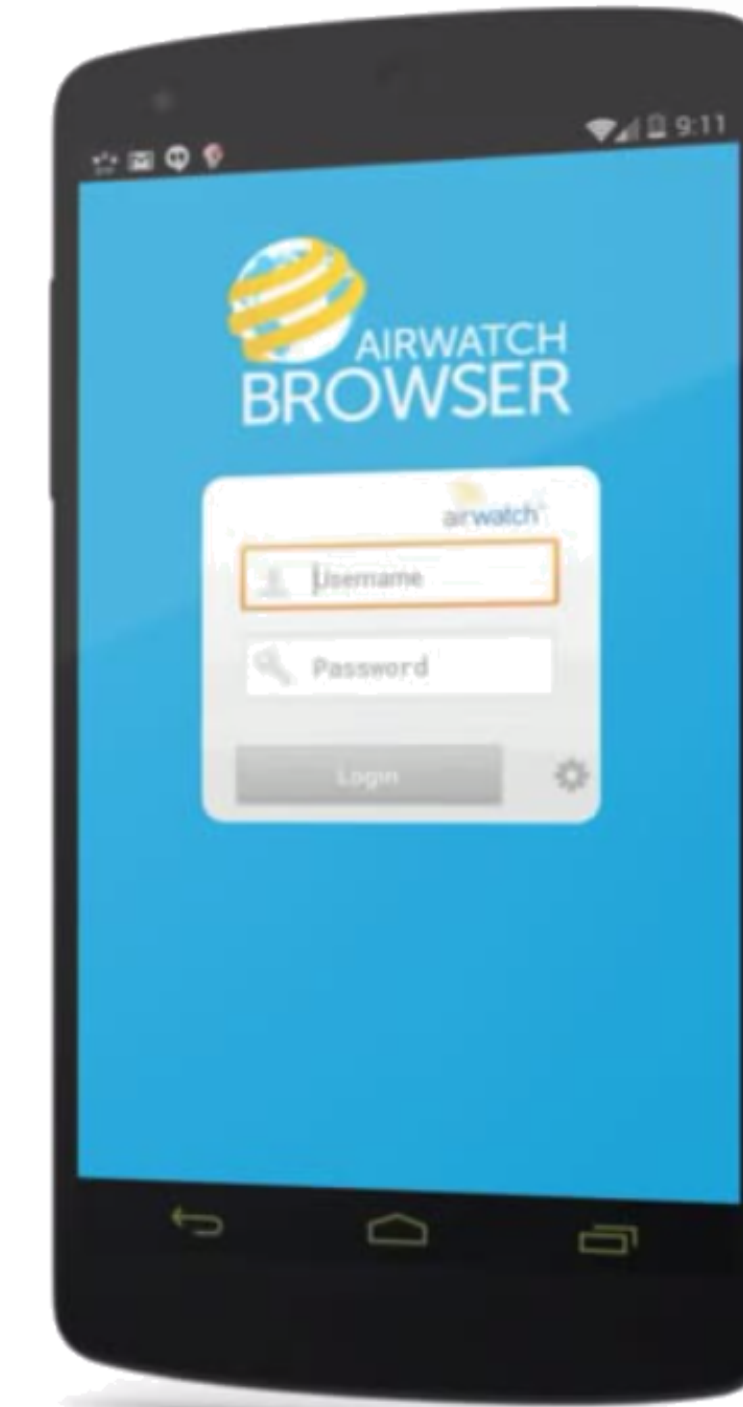
Hypori leverages SELinux with KVM, QEMU and OpenStack for its ACE Server.

Hypori leverages the SPICE (Red Hat) protocol as well as X.264 video encoding as the basis of its ACE Protocol.

ACE
VIRTUAL DEVICE

Functionality

User Experience: We provide a full, natural, undiluted mobile user experience – Android, just as Google intended it.

Native Apps: 1.5M available, without modification, such as GMail, MS Outlook, MS Office, Google Earth, Skype, Lync, …

Functionality

HYPORI

Notifications sync, **touch to access** the **content** in the virtual device

User Experience: We provide a full, natural, undiluted mobile user experience – Android, just as Google intended it.

Native Apps: 1.5M available, without modification, such as GMail, MS Outlook, MS Office, Google Earth, Skype, Lync, …

Market

Bring Your Own Device (BYOD) gigantic market**:**

- **Gartner:** By 2017, half of employers will require BYOD.

- **Radicati:** Enterprise mobility market – $5.7B by end of 2018.

- **451 Research:** Enterprise mobility market – $9.6B by 2018.

- **Market:** BYOD and enterprise mobility isn't going anywhere, no customer is happy with what they have now.

- **First** to remote Android in North America.

- **First** virtual handset manufacturer – an Android distribution designed for remote access.

- **First** software company to be supported by Intel Corp and AirWatch for virtualized Android on x86.

- **First** NSA approved solution to access any mobile app on a classified network. See us on their website: https://www.nsa.gov/ia/programs/csfc_program/component_list.shtml

ACE VIRTUAL DEVICE

Goodness

Solving the challenges of BYOD:

- **Challenge:** Keeping enterprise apps and data secure.
  Security: We provide a separate OS running in the cloud.

- **Challenge:** Many sectors and geographies don't allow BYOD.
  Policy: It's just like teleworking with VDI.

- **Challenge:** Thousands of different types of mobile devices.
  Support: You have a single gold disk image of Android.

- **Challenge:** Complexity undermines potential cost savings.
  Cost Savings: Virtual mobile devices cost 80% less.

- **Challenge:** Many users are afraid of 'big brother' policies.
  Privacy: To the user it's "just another mobile app".

"BYOD 3.0 – mobilizing business processes on a secure platform"

ACE
VIRTUAL DEVICE

Summary

A new product category that will redefine the mobility landscape:

- **Virtual Mobile Infrastructure:** Remote access to Android virtual mobile devices, running in the cloud.

- **Client Support:** Personally or enterprise owned iPads, iPhones, Android devices, Windows devices in Q3,15.

- **Mobile Experience:** Undiluted, natural mobile user experience with the full context of a real mobile device.

- **Addressing BYOD:** Security, policy, support, cost savings, privacy, reimbursement – with a well understood design architecture.

- **Goal:** We plan to build a significant, public software company, headquartered in Austin, Texas.

Hypori gives enterprises and app developers an "Easy" button for secure mobility.

ACE
VIRTUAL DEVICE

Intro

- Cloud Computing is on everyone's mind
    - Federal Leadership see's it as a cost savings Opportunity
    - Vendors want to pursue this emerging market Opportunity
    - Technologists are looking for relief
        - Security churn
        - Time to market pace
        - Availability
- Potential Hurdles
    - Current investments in technologies
    - Current support contracts
    - High cost associated with cutover directly to desired end-state
- What might this solution look like
    - What is realistic
        - Leveraging current investments
    - What isn't likely
        - Going from current state directly to desired state

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A very interesting 4 years in DOD space

- Researching cloud technology, built a couple of prototypes in a R&D environment
- The problems we were trying to solve for were obvious
  - Time to Market was too long
  - Patching cycles due to security requirements
  - ROI too low for the customer on mods and new requirements
  - There were too many self-inflicted issues generated in system stack provisioning
    - Operational costs were too high
    - Call/incident volume was high
  - Current staffing model was not scalable
    - The IT staff not only conducting the engineering, but the integration, production support, on-call activity
    - The staff wasn't happy
  - There was virtually no documentation

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Goal setting

- Goals were set in order to address each of the problems stated prior
  - Reducing the amount of time it took to create and present a whole system stack with test/prod data
  - Reduce the amount or work involved in created the mentioned system stack
  - Simplifying IT governance
  - Reducing the amount of human error introduced
  - Reducing time to market for fulfilling customer requirements
  - Transformation of the IT staff from reactive to proactive
- Empower the developers
- Empower the DBAs
- Encourage the developers and IT professionals to "play" in safe zones

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A Strategic Solution

- Cloud computing wasn't necessarily the answer as an out-of-the-box solution
- It certainly provided some capabilities that addressed some of the goals we were attempting to accomplish
- There were some capabilities that were not natively available in packaged cloud solutions
  - Had to look for other options
- Snapshot cloning provided the means to address some of the goals

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The Solution cont.'d

- Cloud Forms
    - A Strategic Acquisition
    - We purchased a "capability"
    - Allowed current use of:
        - Infrastructure
        - Technology investments
            - Vmware
            - Netapp
            - Monitoring solutions
            - Etc
- Was able to directly "Snap In" to current Data Center
- Moving forward in a Hybrid Cloud Model
- Can leverage Cloud Portal to offer services on the front end
- Attach to variable infrastructure providers on the backend
- Has the flexibility that is required to be successful in the Federal Sector

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Opportunities for Success

- Applying solutions in fragmented organizations
  - Ebbs and flows of independent departments and agencies
  - Timing is an issue for enterprise transformation
  - Have to help the customer in the public sector to realize and understand the difference between:
    - Tactical purchase
      - Products/solutions that are the end-state
    - Strategic purchase
      - Products/solutions that will position IT to migrate to end-state architecture
  - Probability of departments and agencies quickly going directly to a cloud end-state is low
  - Public Sector needs specialists and strategic solutions to get them there

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