Using CA AppLogic for System z to Leverage Your Mainframe in the Private Cloud

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Mainframe Chief Architect
August, 2012

agility made possible™

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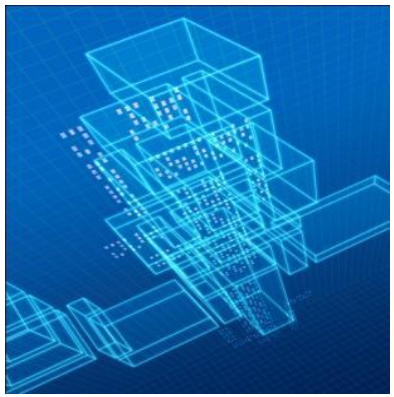
agenda

- Business service innovation
- Roadmap to the cloud
- Cross-platform business service delivery with CA AppLogic



88%
Enterprise Commercial Apps Moving to the Cloud

Can you keep up with business demand for innovation?

Sources: See addendum

30%
of IT budgets being allocated to cloud deployments

74%
Companies have deployed hybrid cloud services

73B
Estimated for Public Cloud in 2015

1 IDC, "Top 10 Predictions, Worldwide CIO Agenda 2012 Top 10 Predictions," David McNally, Meredith Whalen, January 2012. IDC #232816. Volume 1.

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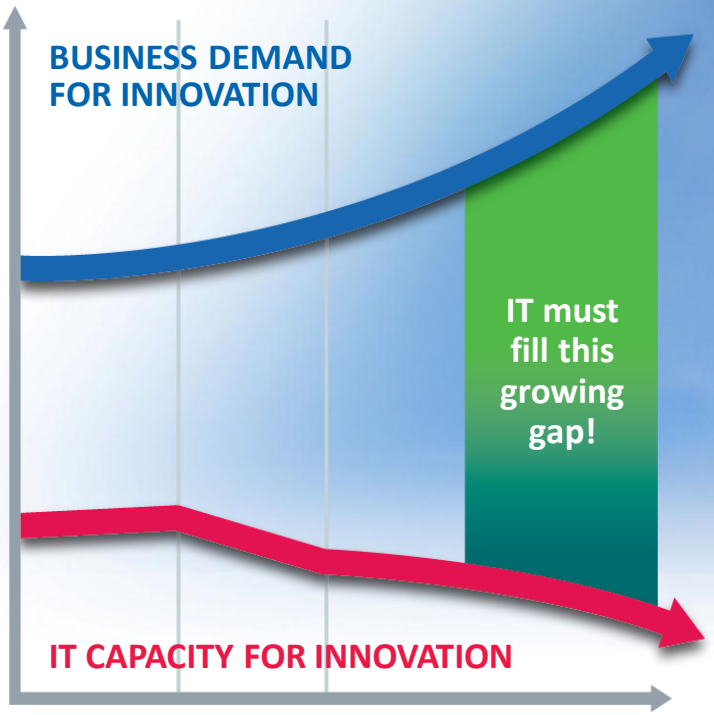
the “New Normal” and the shift to innovation



IT must deliver new services that ACCELERATE INNOVATION

Mobility | Social | Big Data | SaaS | Client Experience

While TRANSFORMING delivery of mainstream IT

Rationalization | Agile Cloud Delivery | Standardized Infrastructure | Automation Reengineering | Bring Your Own Device

Shift from

Managing Technology To Delivering Innovation

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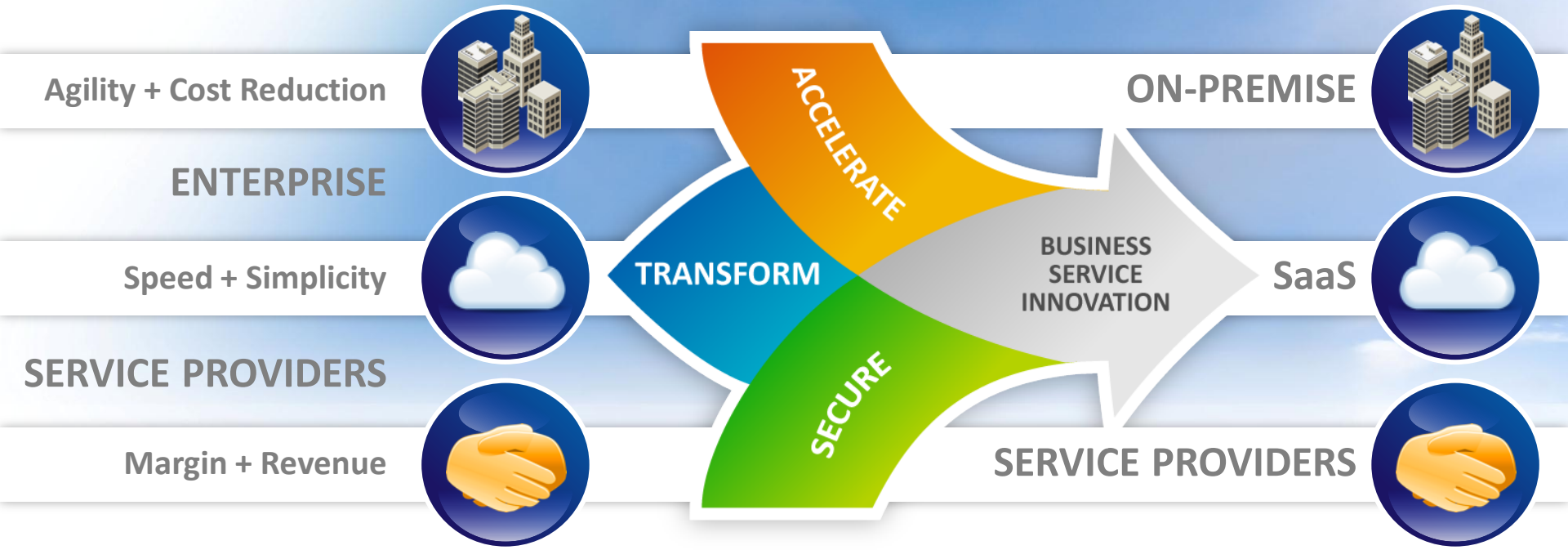
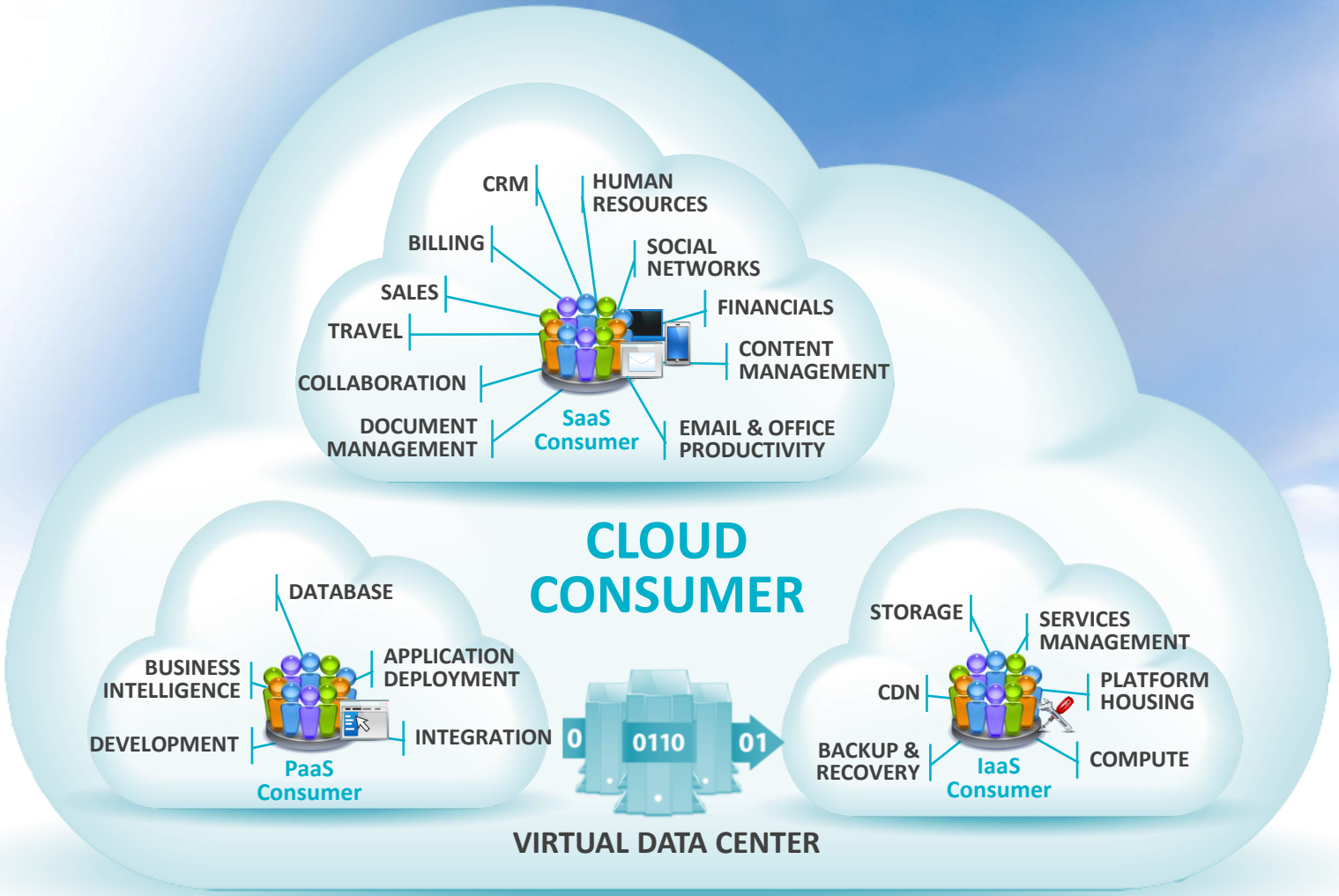
cloud as key enabler to innovation and its benefits



the innovation mandate: everything as a service

complexity of hybrid service delivery



Source: NIST Cloud Computing Reference Architecture | Version 1, March 30, 2011

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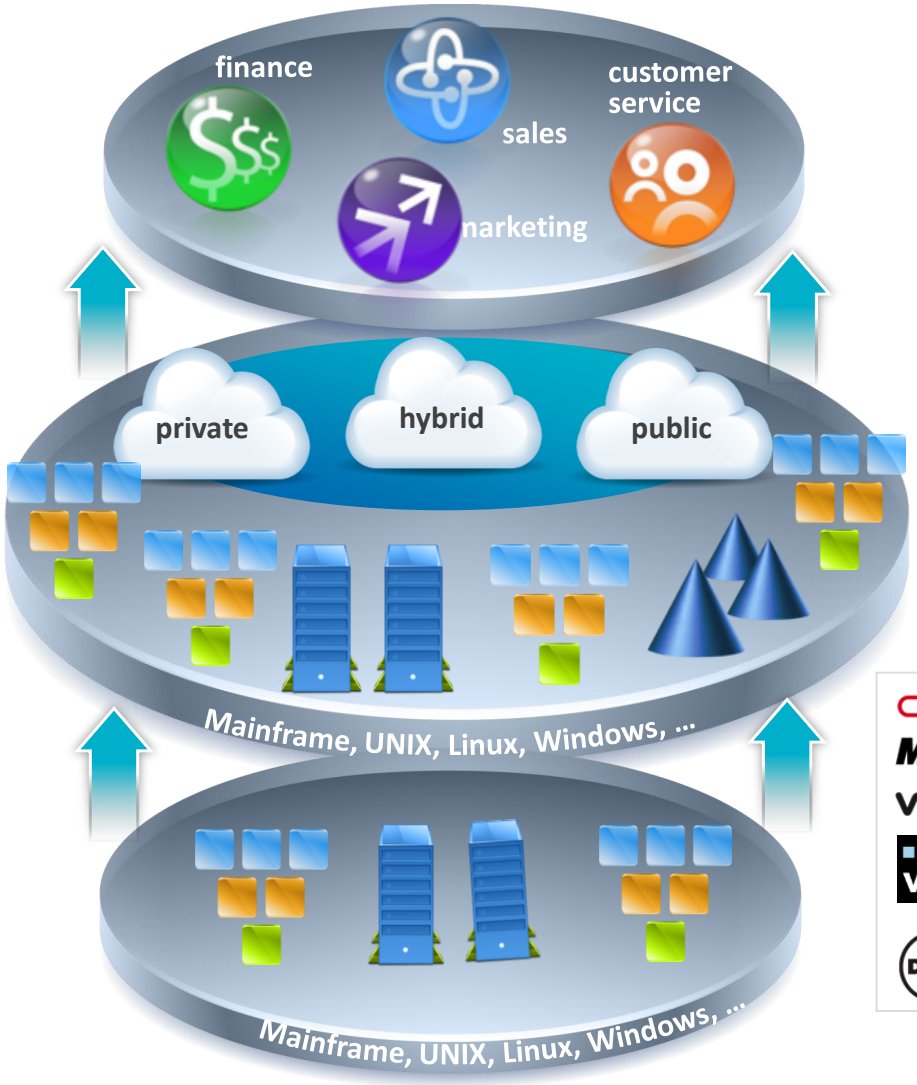
service delivery in vast heterogeneous IT ecosystem

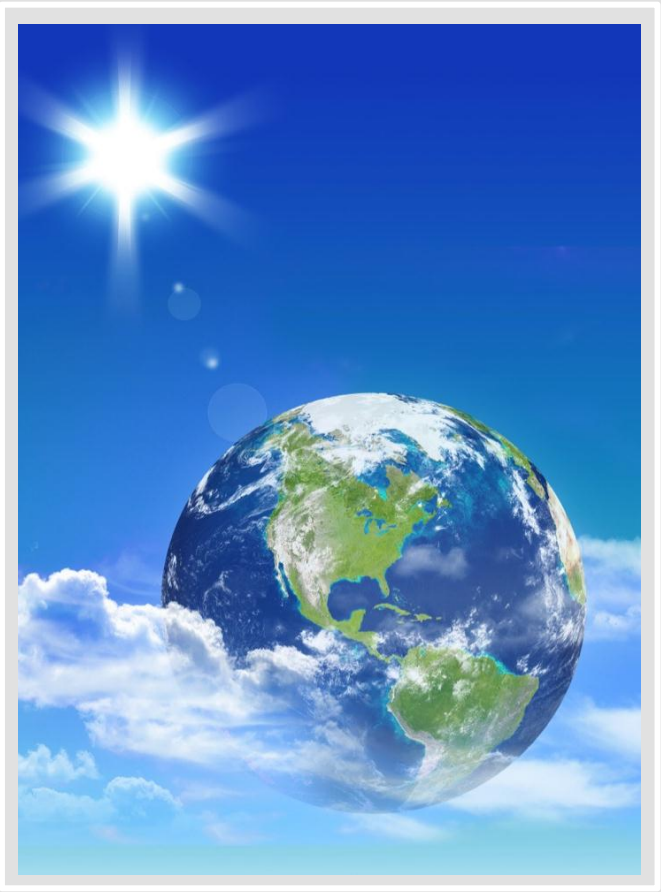
BUSINESS SERVICE

SERVICE DELIVERY PLATFORM

TRADITIONAL DATA CENTER



IT should be simple, easy and safe to deliver manage



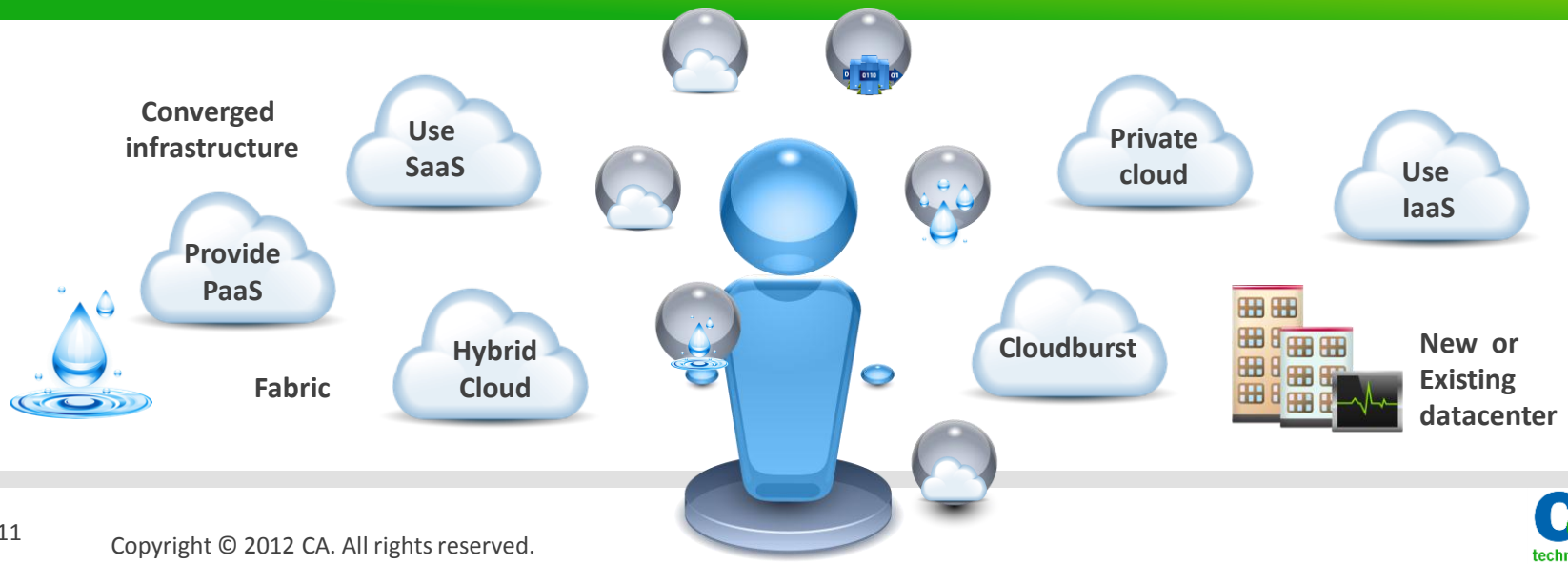
Business Service Innovation can be achieved in a complex and constantly evolving technological world

getting started: how do you know?

CRITICAL QUESTIONS FOR TODAY'S CIO

- What apps should we move to the cloud?
- Which services do I want to create?
- Do I have enough or too much capacity?
- Do I have transparency to services performance, cost and its value to the business?
- How do I accelerate application development and test cycle times?
- Should we buy, build or outsource?
- What about performance, security, and compliance and risks?
- What is the cost of a mistake…?

IT MUST MANAGE APPS AND SERVICES ACROSS HYBRID DELIVERY MODELS



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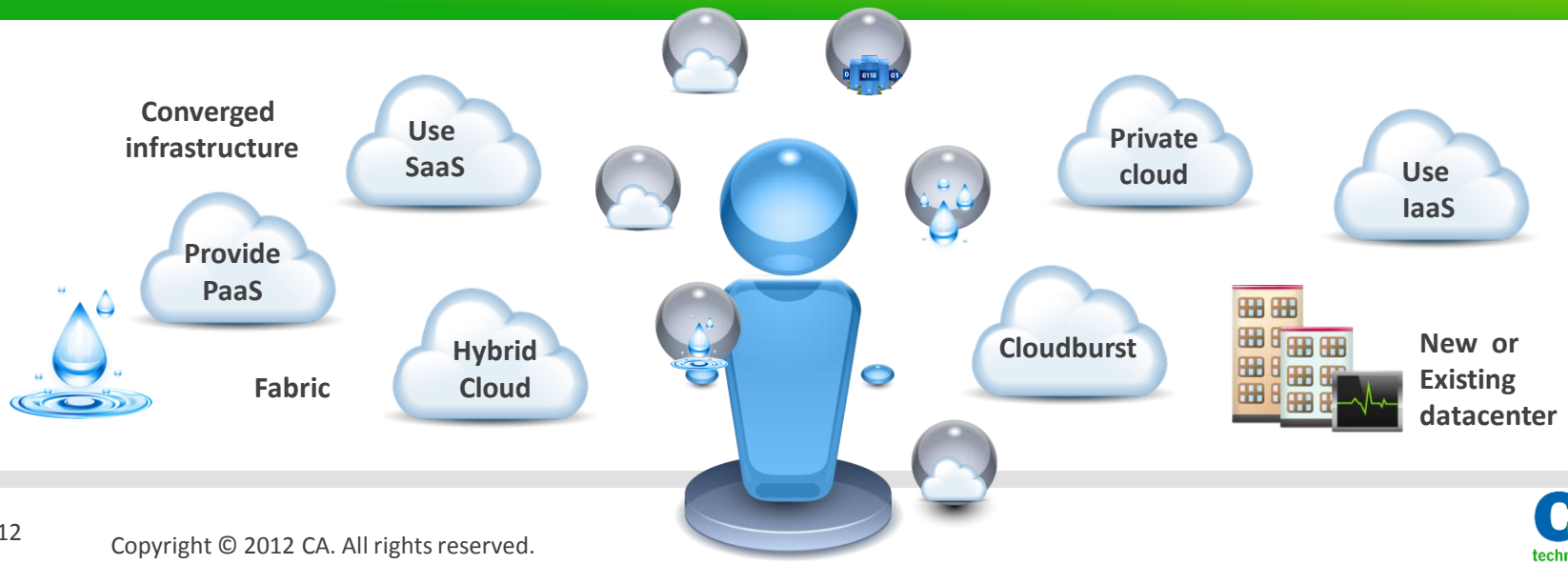
getting started: what do you need?

TO BECOME MORE AGILE, A PLATFORM IS NEEDED

- Think of cloud as a management paradigm, *not* a place or a thing
- Work across traditional silos to remodel today's applications as "business services"
- Look at products and tools that do more than just "enable the cloud" – they must "enable the transition to the cloud"
  - Does my platform protect my investments?
- Look at products and tools that work together to form a consistent platform
  - Does provisioning work with capacity planning, performance management, service assurance…?
  - Do the tools support my hardware and operating environment choices?

IT MUST MANAGE APPS AND SERVICES ACROSS HYBRID DELIVERY MODELS



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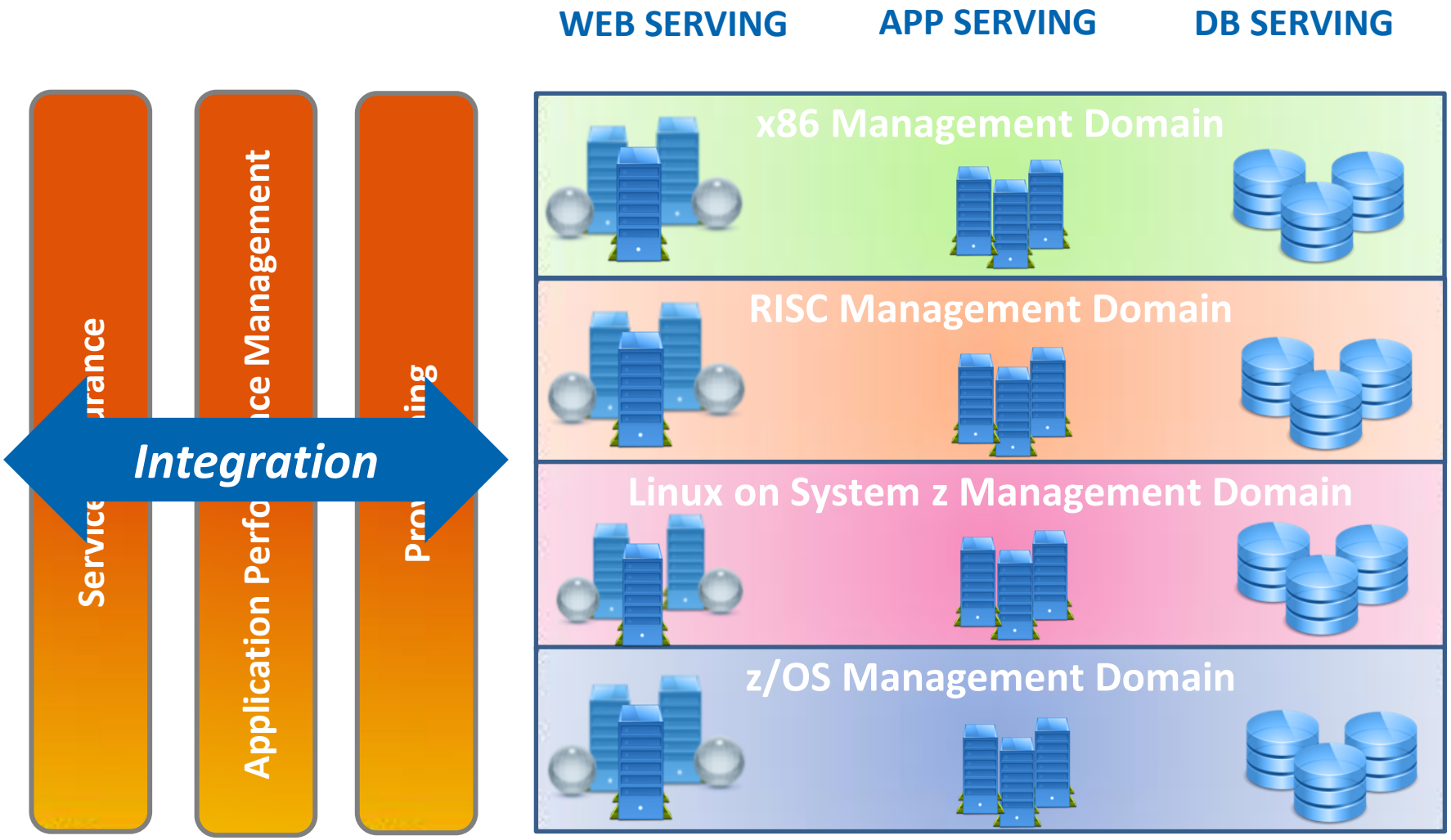
getting started: what do you need?

WHAT IS A PLATFORM?

A successful platform implementation improves flexibility and agility by reducing complexity, while supporting the reuse of existing, proven implementations

platforms can help eliminate silos



roadmap to the cloud

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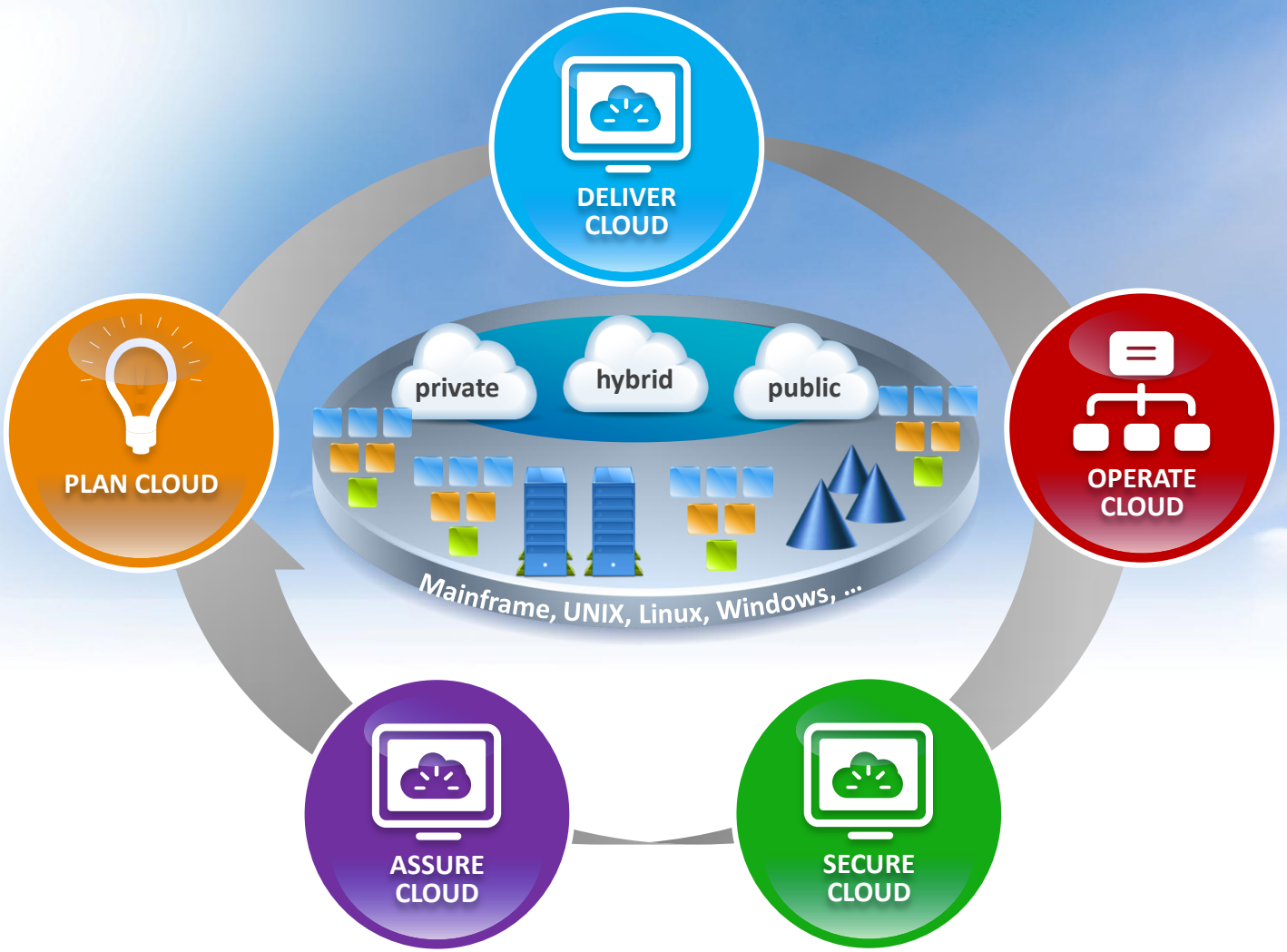
roadmap to the cloud



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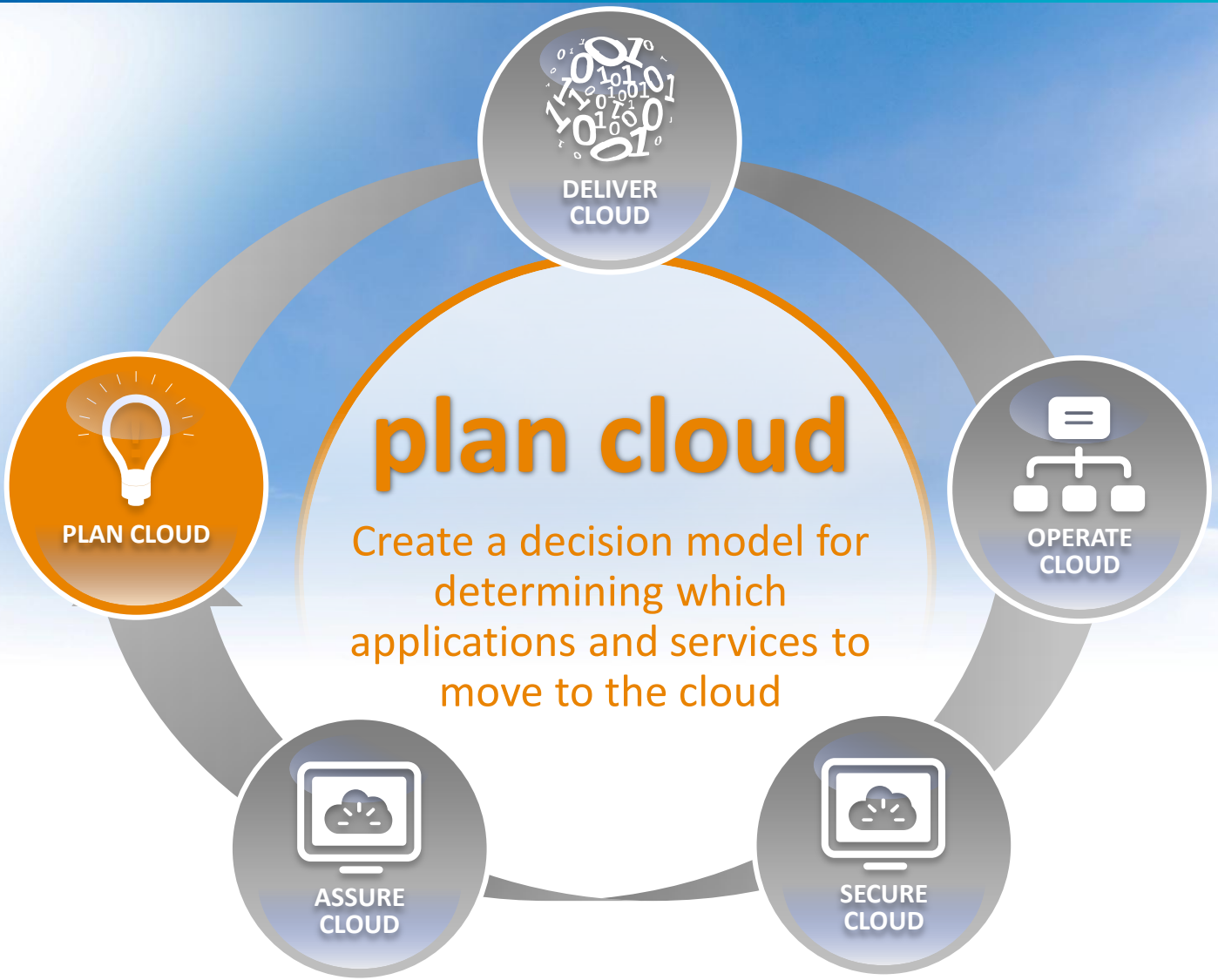
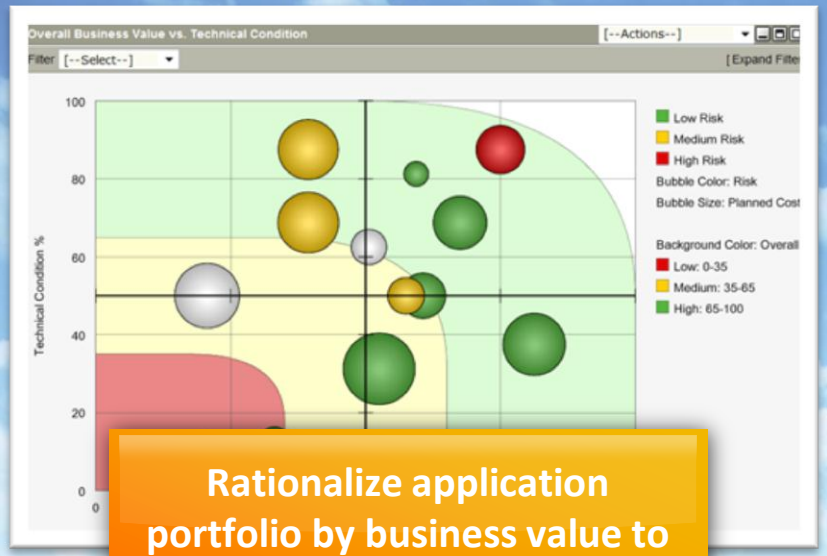
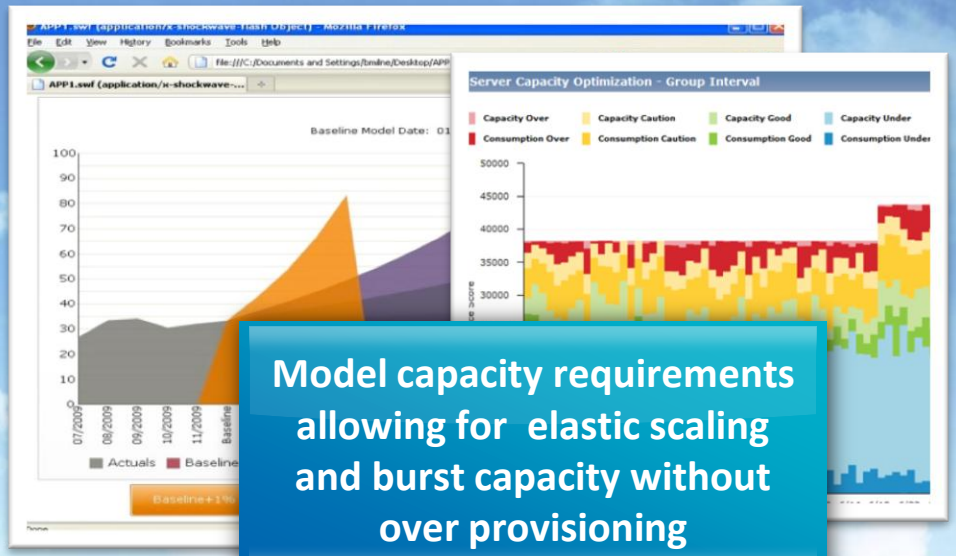
plan cloud
create decision model for validating cloud services suitability



modeling agile cloud services

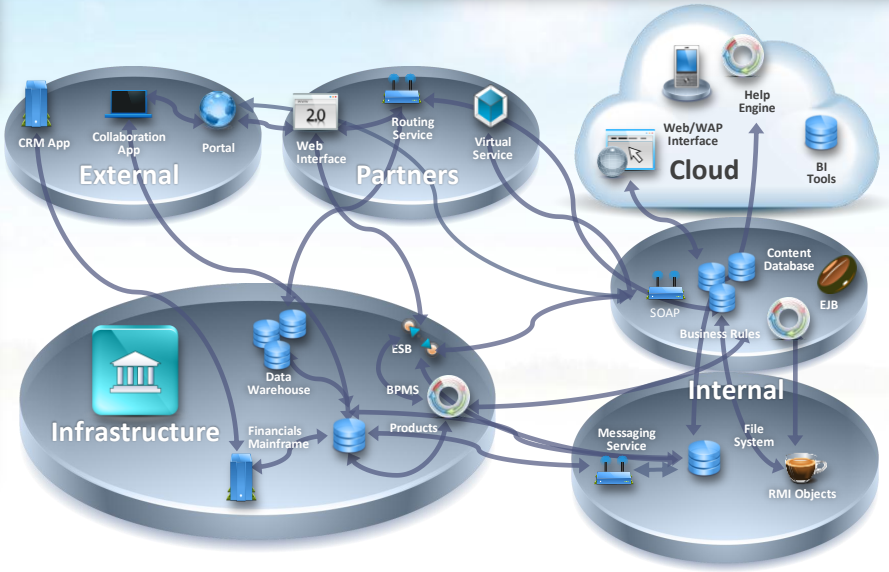




Rationalize application portfolio by business value to select and validate services most suitable to cloud

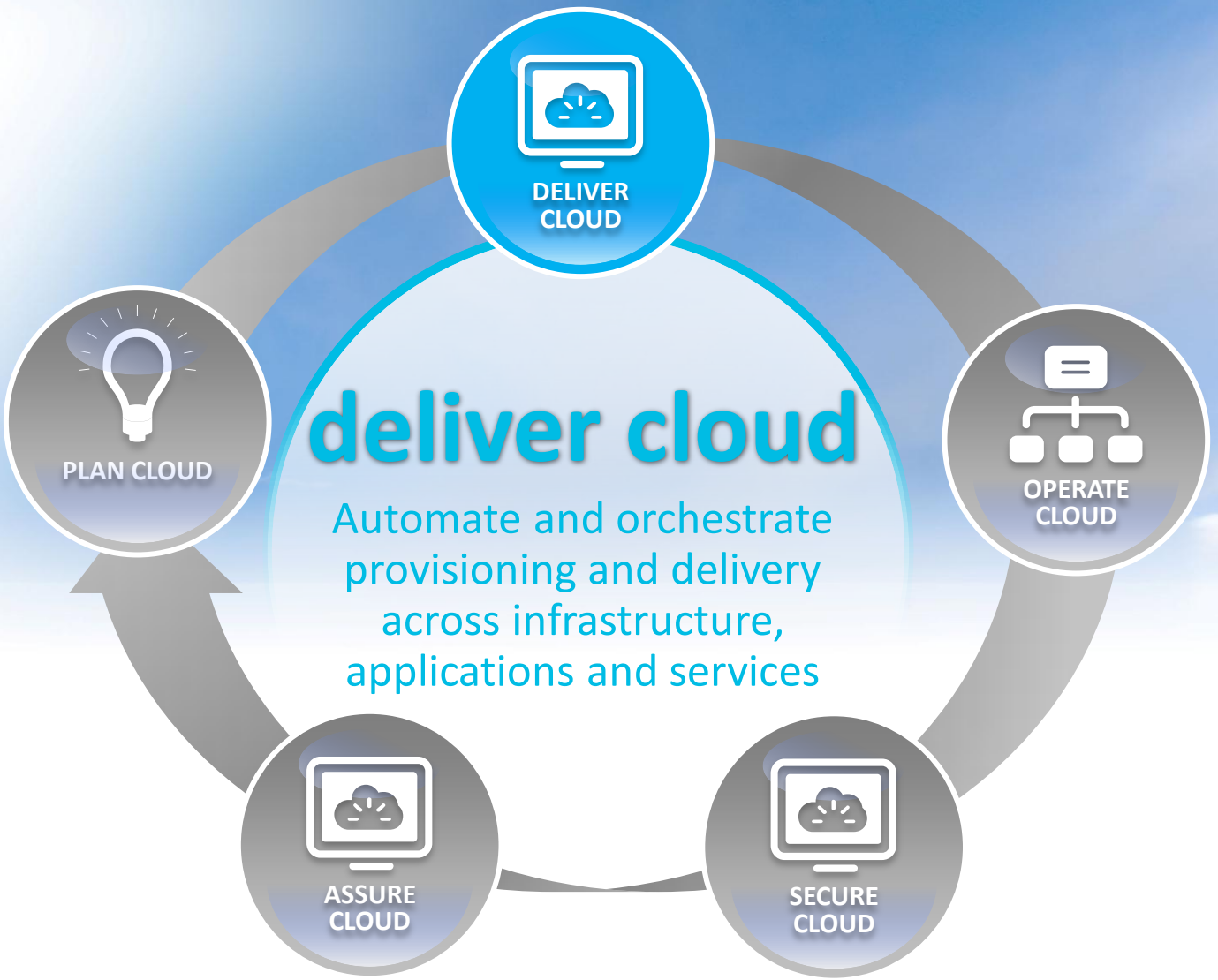
Model capacity requirements allowing for elastic scaling and burst capacity without over provisioning

Develop and test application and cloud services behavior in simulated production environment



deliver cloud

automate and orchestrate provisioning and delivery



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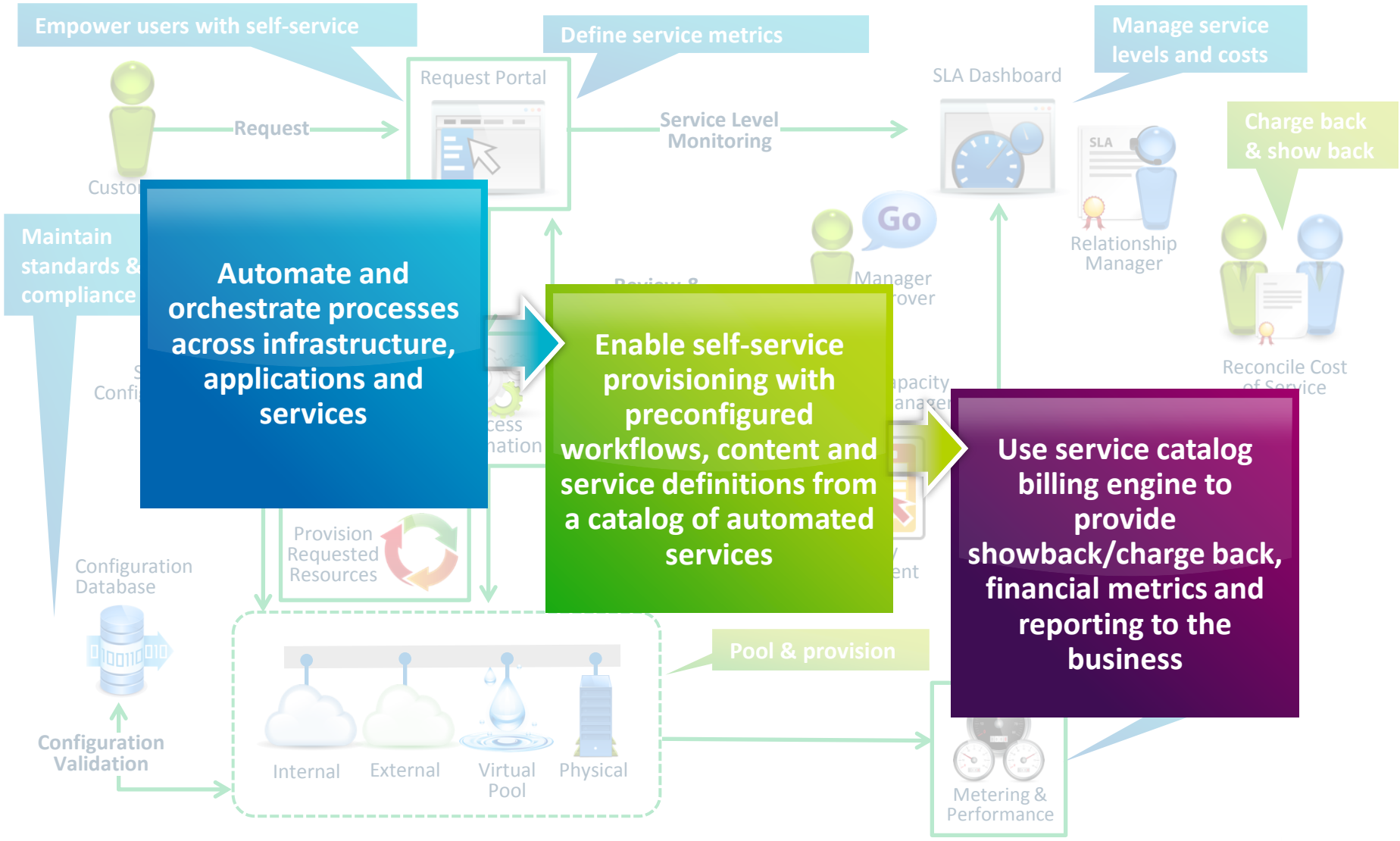
how to build and deploy a private cloud



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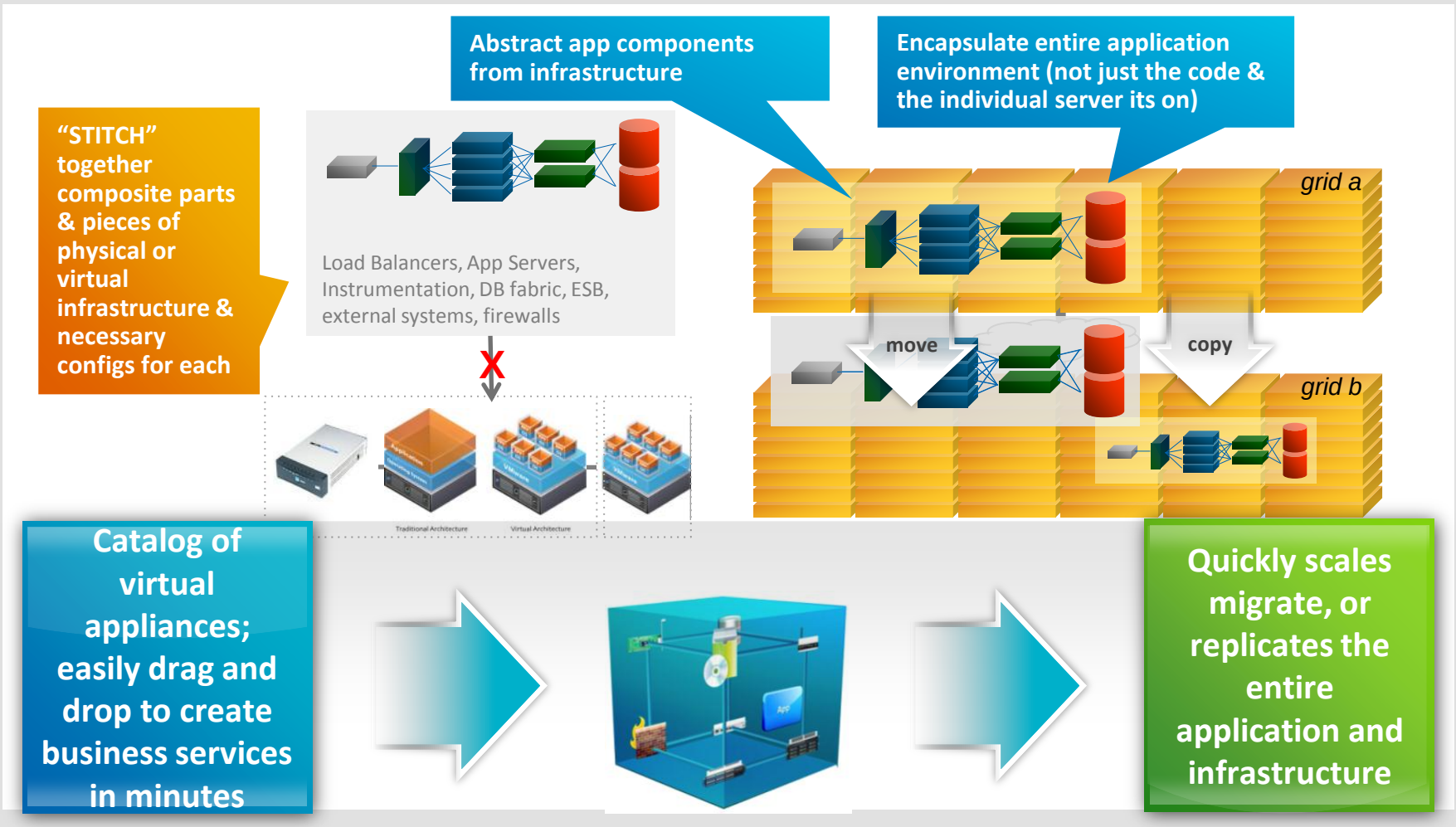
abstract applications from infrastructure



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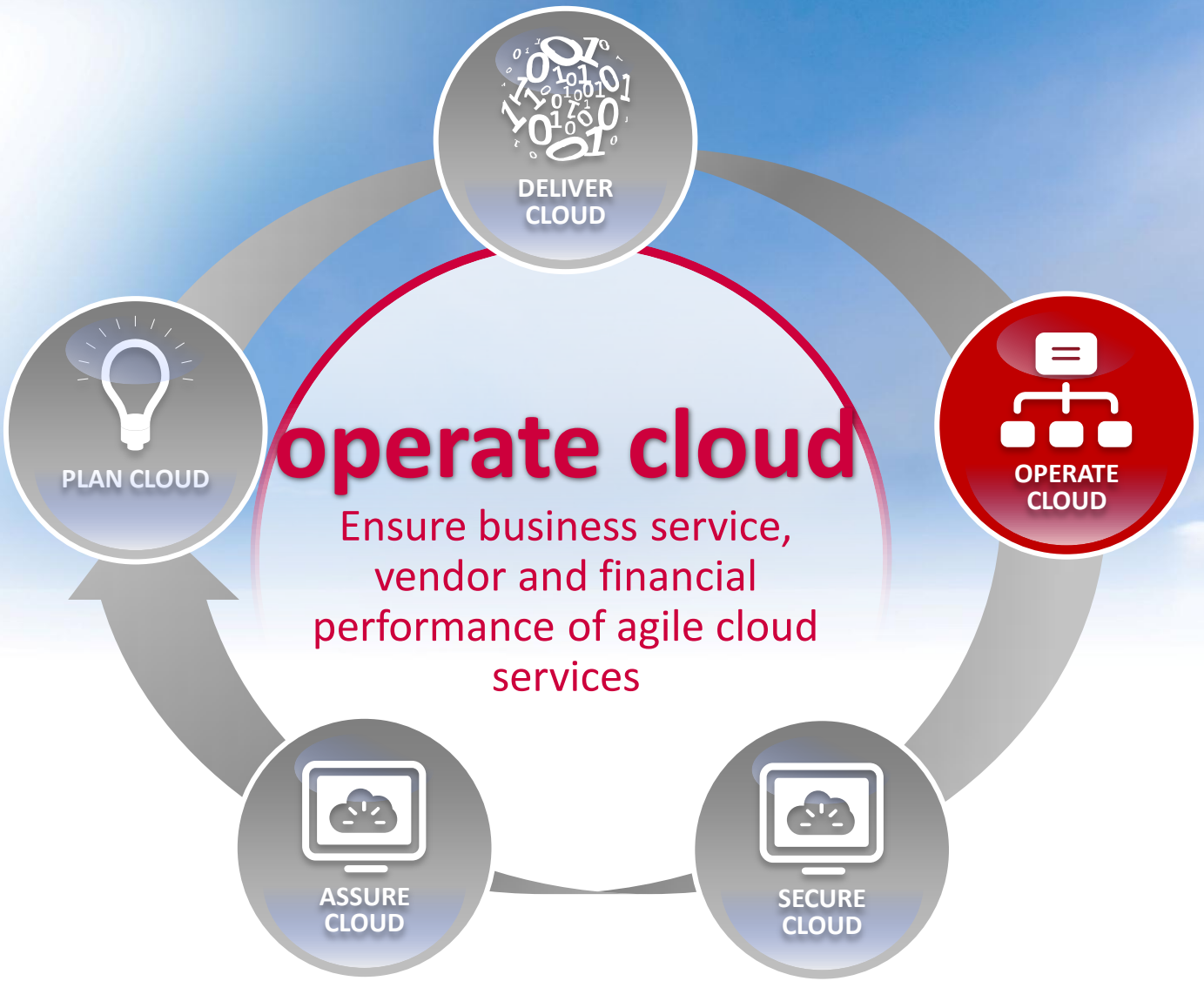
operate cloud: manage IT as a business

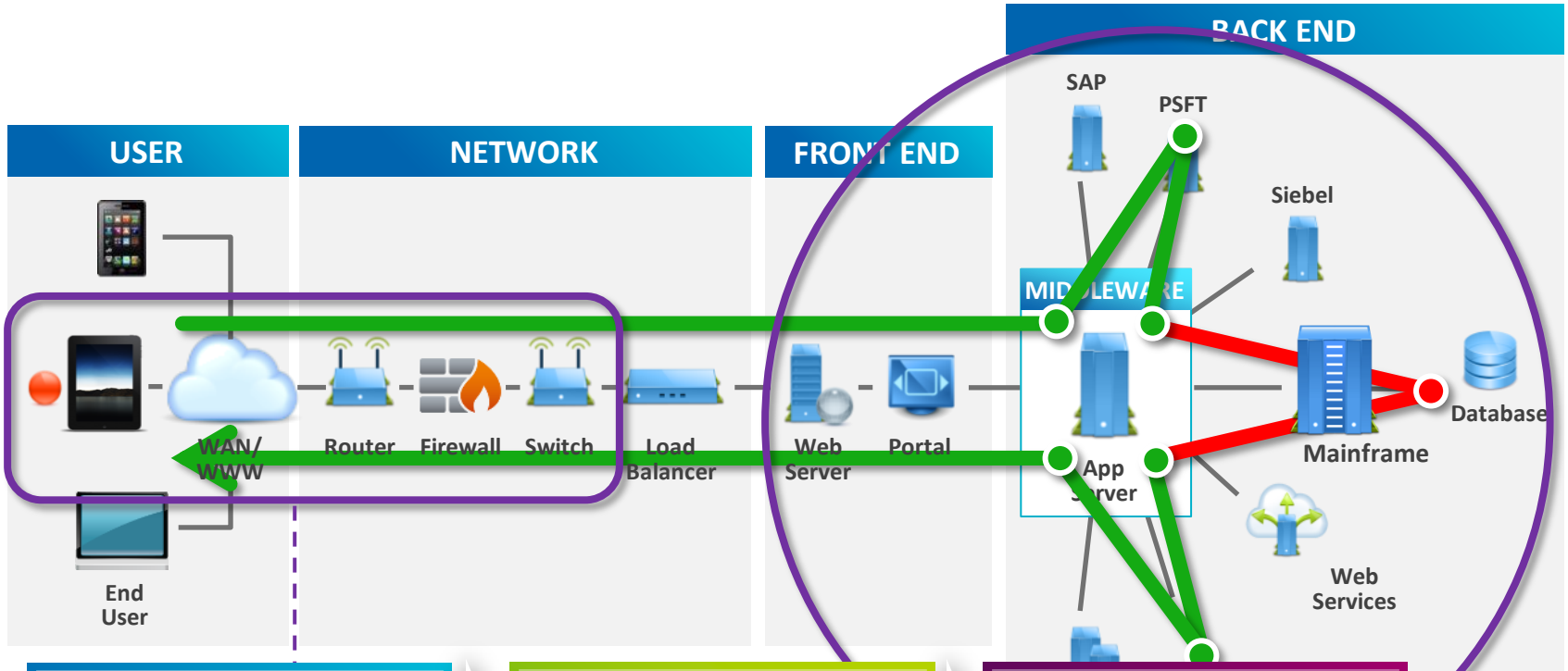


deliver proactive performance management across on-premise and the cloud

Understand End-User experience; establish SLAs

Monitor all business transactions through the IT infrastructure; measure response and SLAs

Proactively detect issues; conduct problem triage; diagnose root cause



Monitors all transactions and application service delivery across hybrid environments

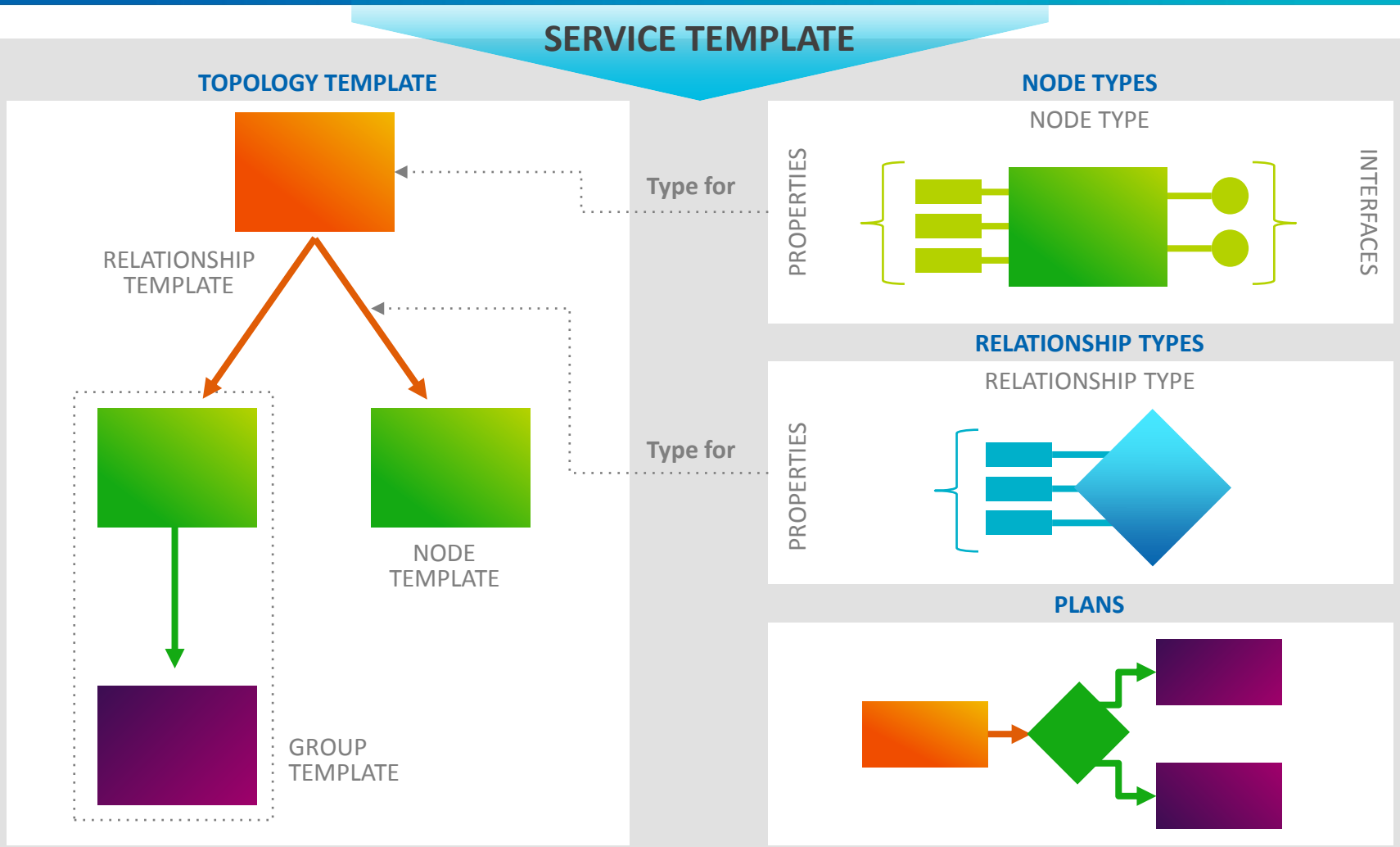
Link user experience with business value and the underlying IT infrastructure

Proactive, rapid problem identification, triage and root cause diagnostic

2011 Gartner Magic Quadrant Leader for Application Performance Management[2]
September 2011

cross-platform business service approach

anatomy of a service



Source: Topology and Orchestration Specification for Cloud Applications Version 1.0, Committee Specification Draft 02, 05 April 2012

CA AppLogic® – what is it?

CA AppLogic is a turnkey cloud computing platform

Enables enterprise customers to quickly provision, deploy, and manage cloud applications and supporting infrastructure

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1. all the components are virtualized

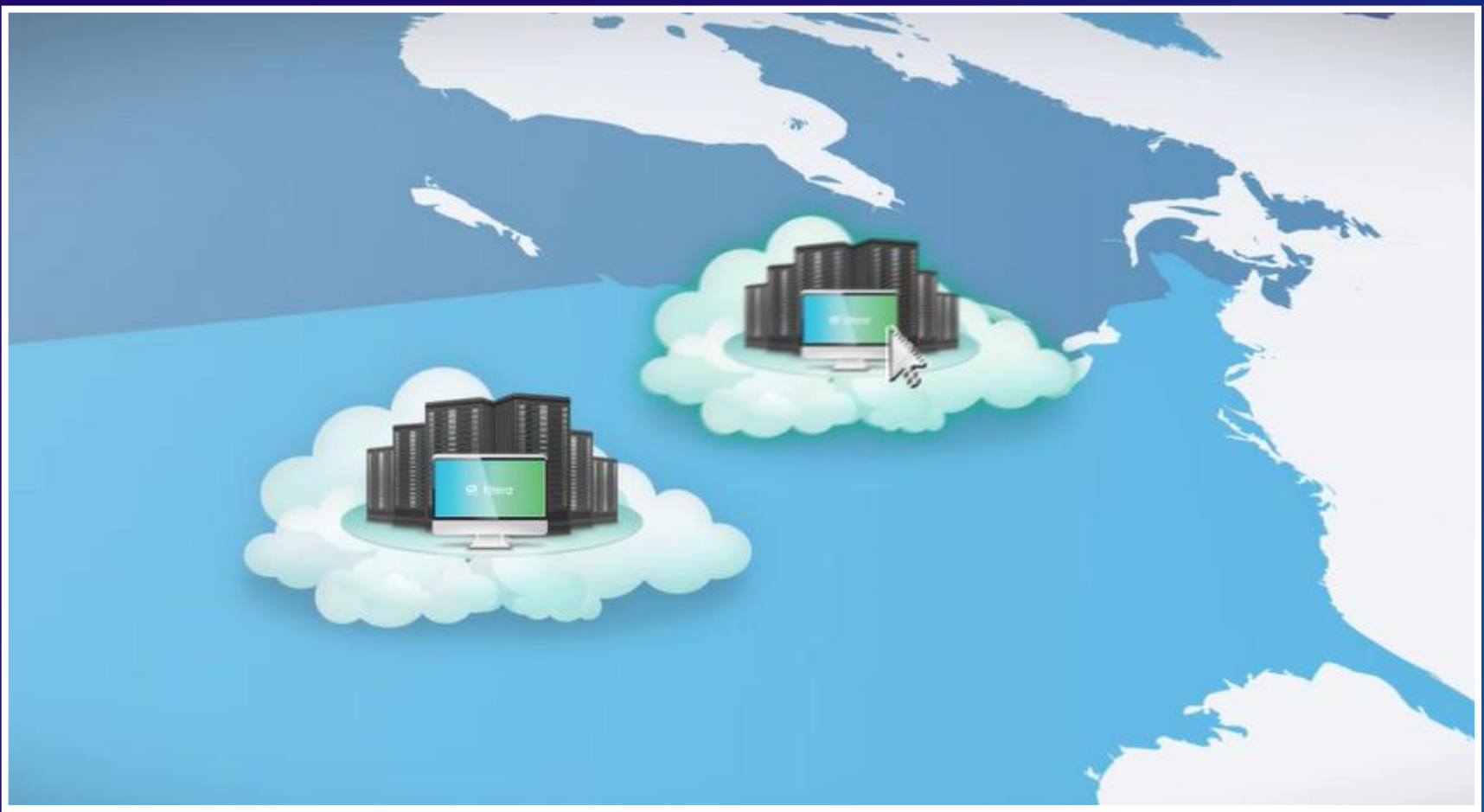
servers, switches, load balancers, software, EVERYTHING!

2. application & infrastructure become a single object

CA AppLogic does not differentiate between them

3. easy replication / migration

virtualized business services can be quickly copied or moved



benefits of a virtual business service

ability to deploy applications & services in minutes

More Agility for Enterprises

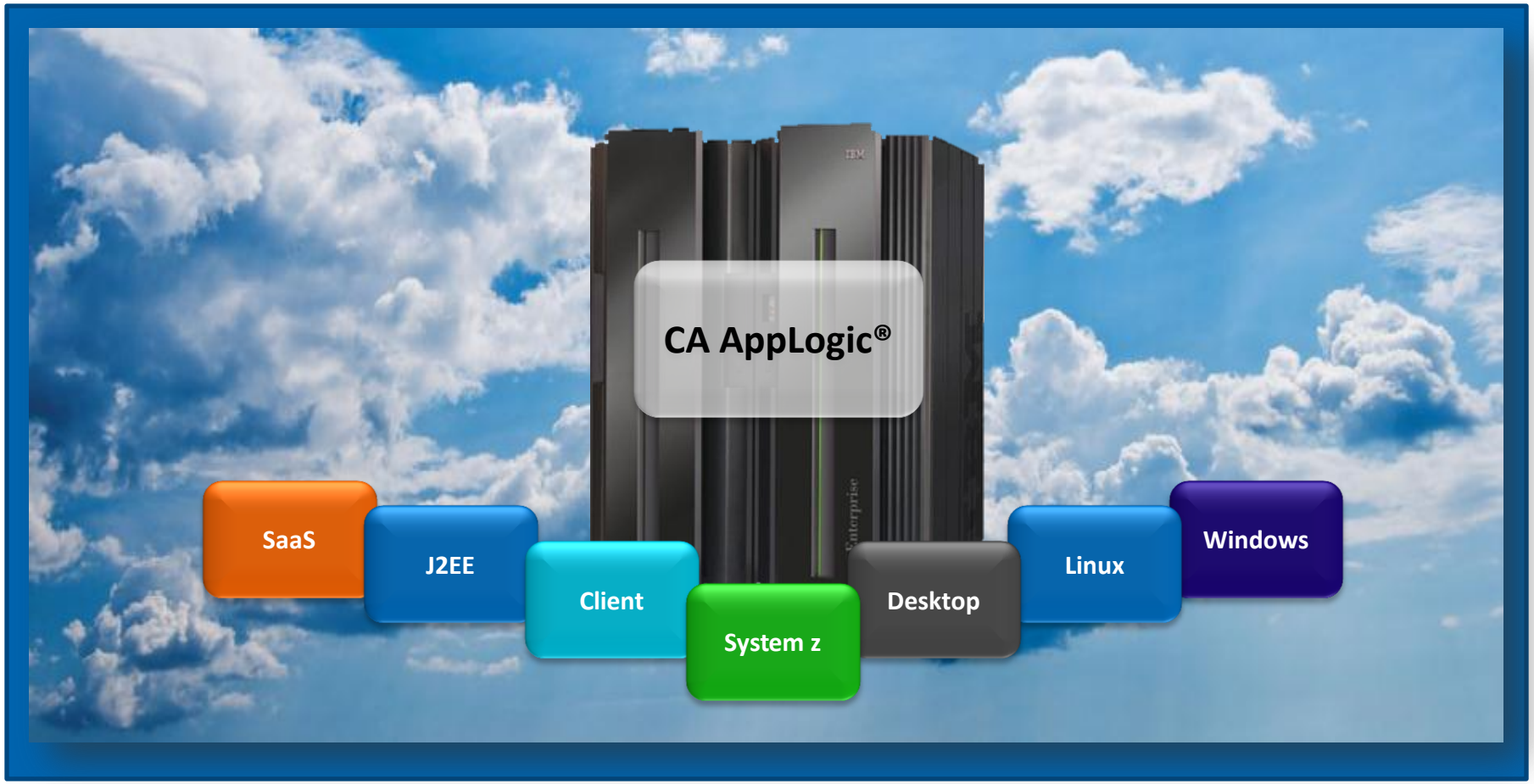
- Build and deploy apps in minutes!
- On-demand elasticity and flexibility
  - Migrate entire apps instantly
  - Replicate and scale apps instantly
- Work through an intuitive GUI, not by pulling cables and copying gold images

Ability to Build Services for MSPs

- Build new services that *drive revenue* in a commodity market.
- *Instantly replicate custom* services for other customers
- Migrate entire apps instantly

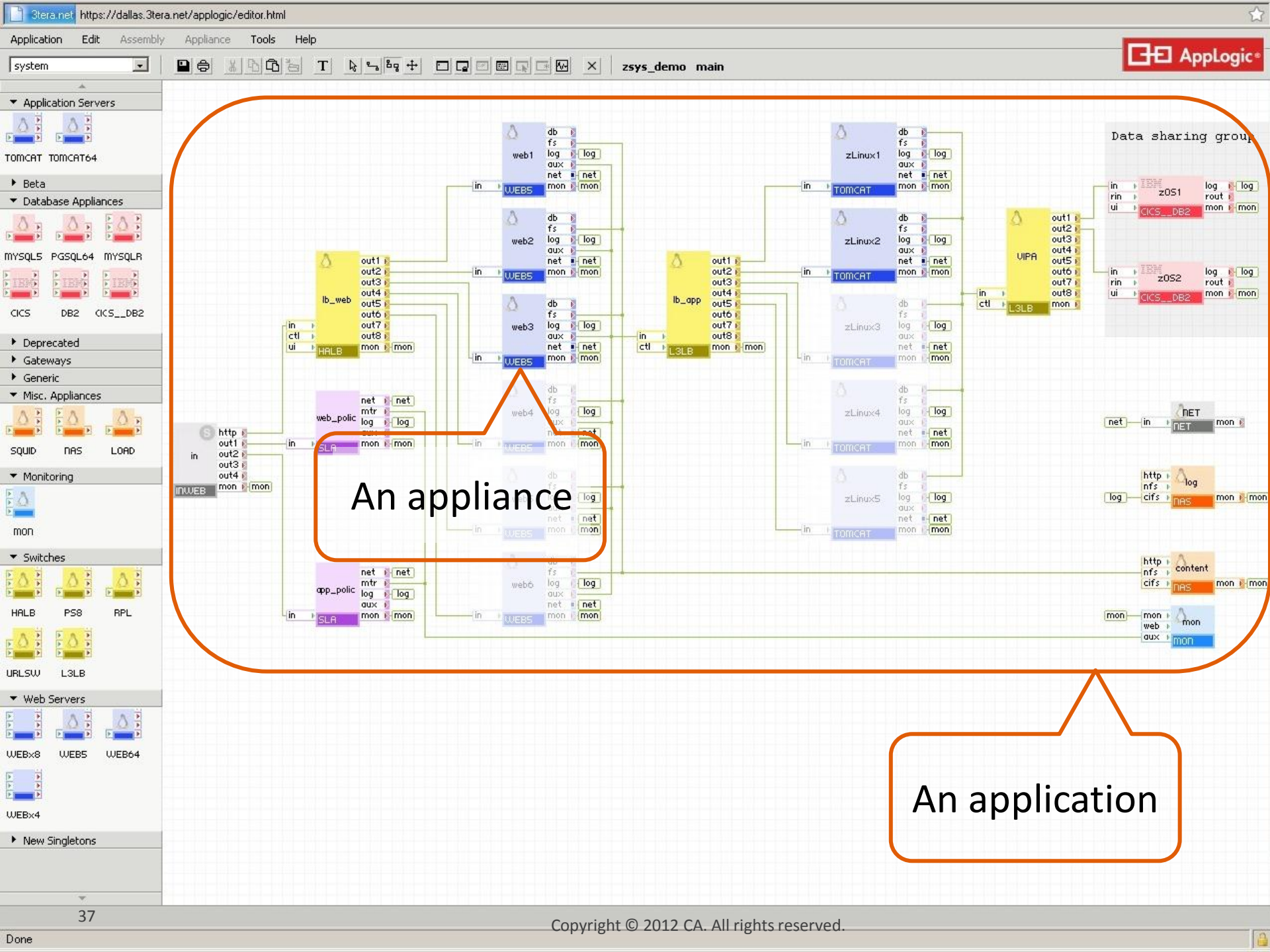
improve your IT supply chain

create & deploy cross-platform business services fast

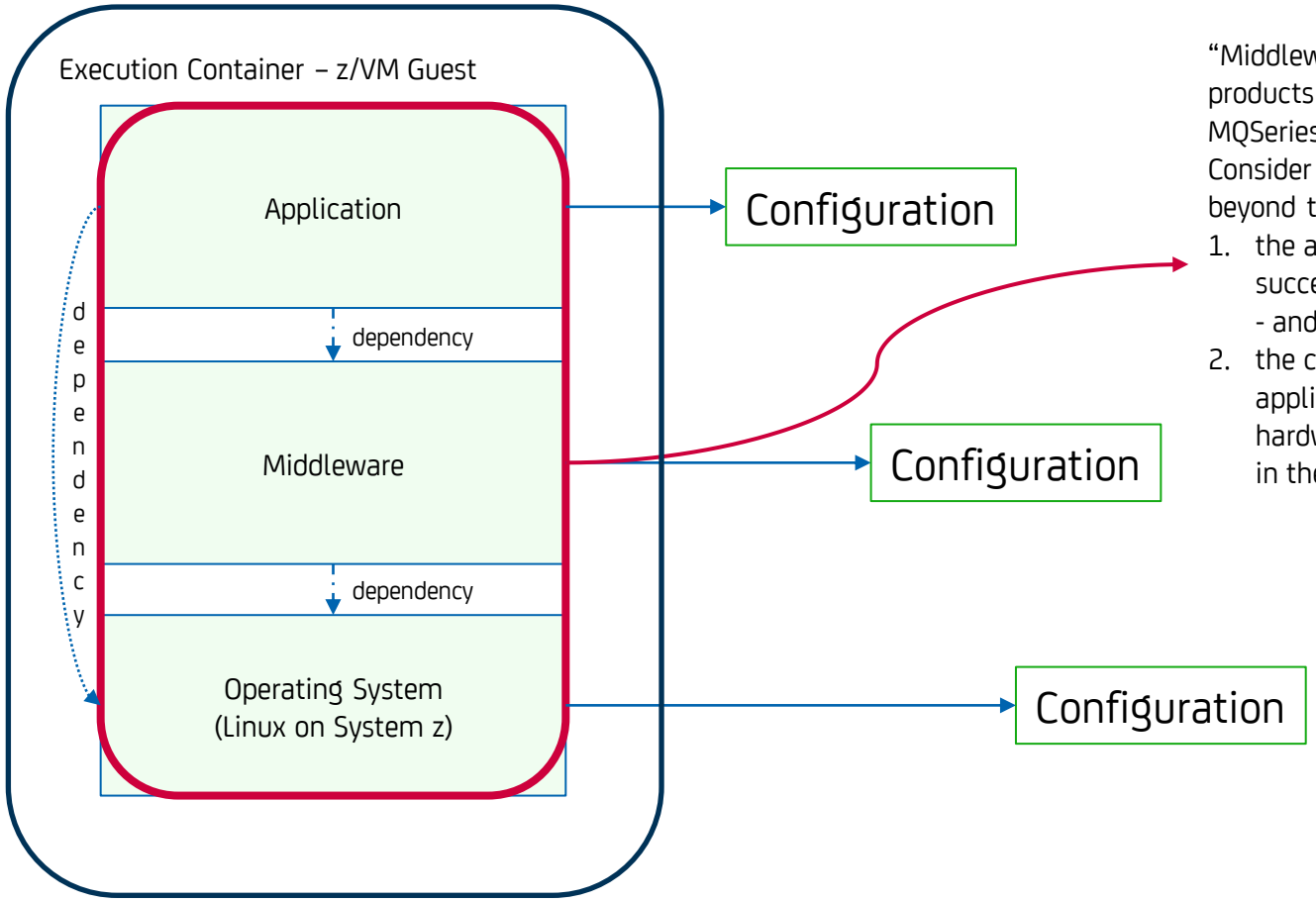


extending CA AppLogic to support System z
simplify and accelerate mainframe cloud deployment

- Quickly provision, deploy and manage cloud applications on System z as part of a hybrid cloud computing infrastructure
- A single System z196 server will be able to host dozens of AppLogic grids, each with hundreds or thousands of virtual appliances
- Energy efficiency - single System z196 server can host thousands of Linux on System z applications, effectively replacing the need for hundreds of distributed servers and their required network fabric
- Easy connectivity to z/OS resident application and database servers
- System z cloud deployment combines cost reduction and agility with massive scalability and reliability



anatomy of an appliance



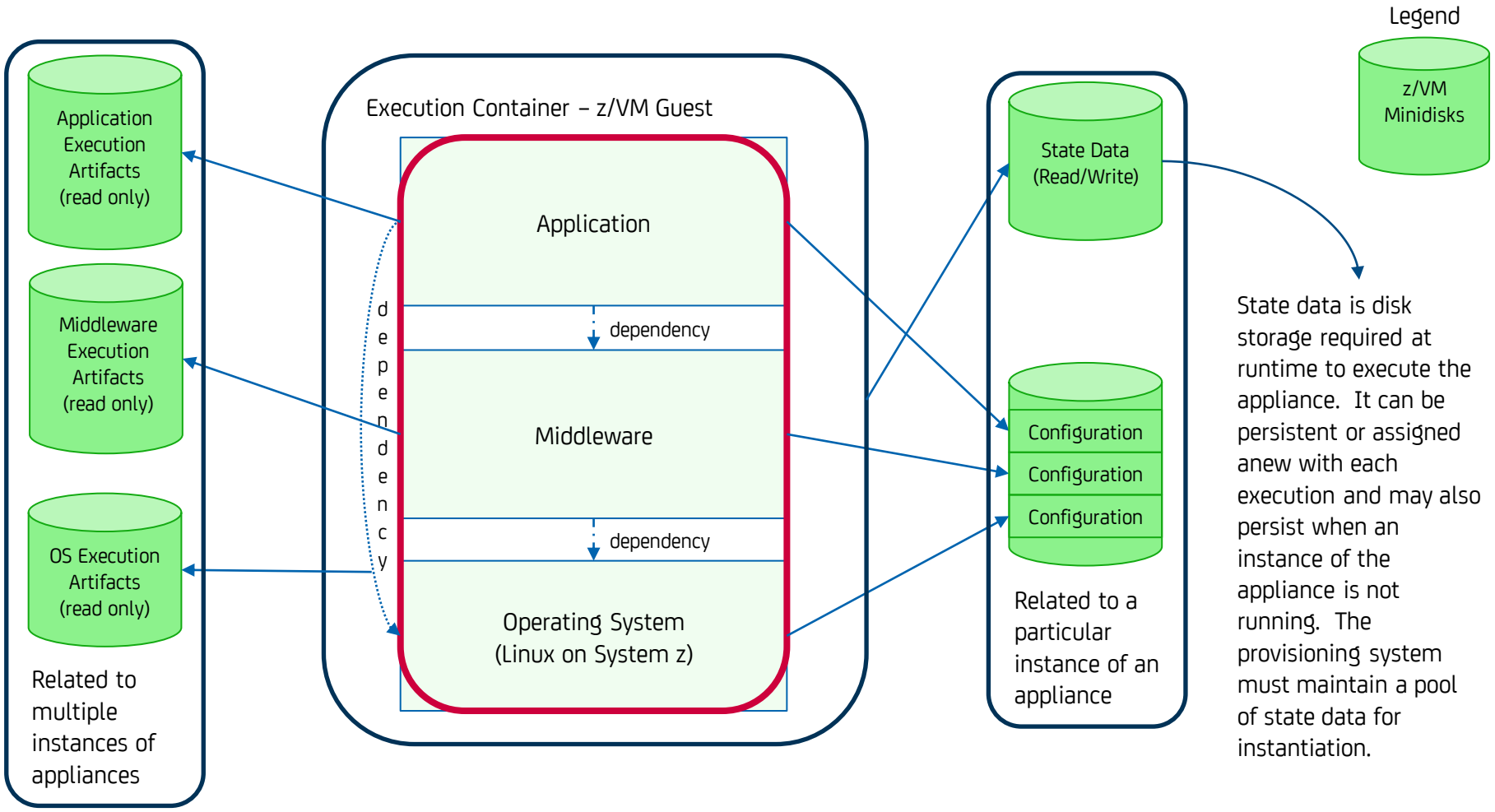
"Middleware" is likely to be many products or parts of products (e.g. MQSeries, Tomcat, workload agents). Consider this a list of things that, beyond the OS:

1. the application needs to execute successfully
   - and -
2. the customer needs to have the application stack (app to hardware) execute harmoniously in their environment.

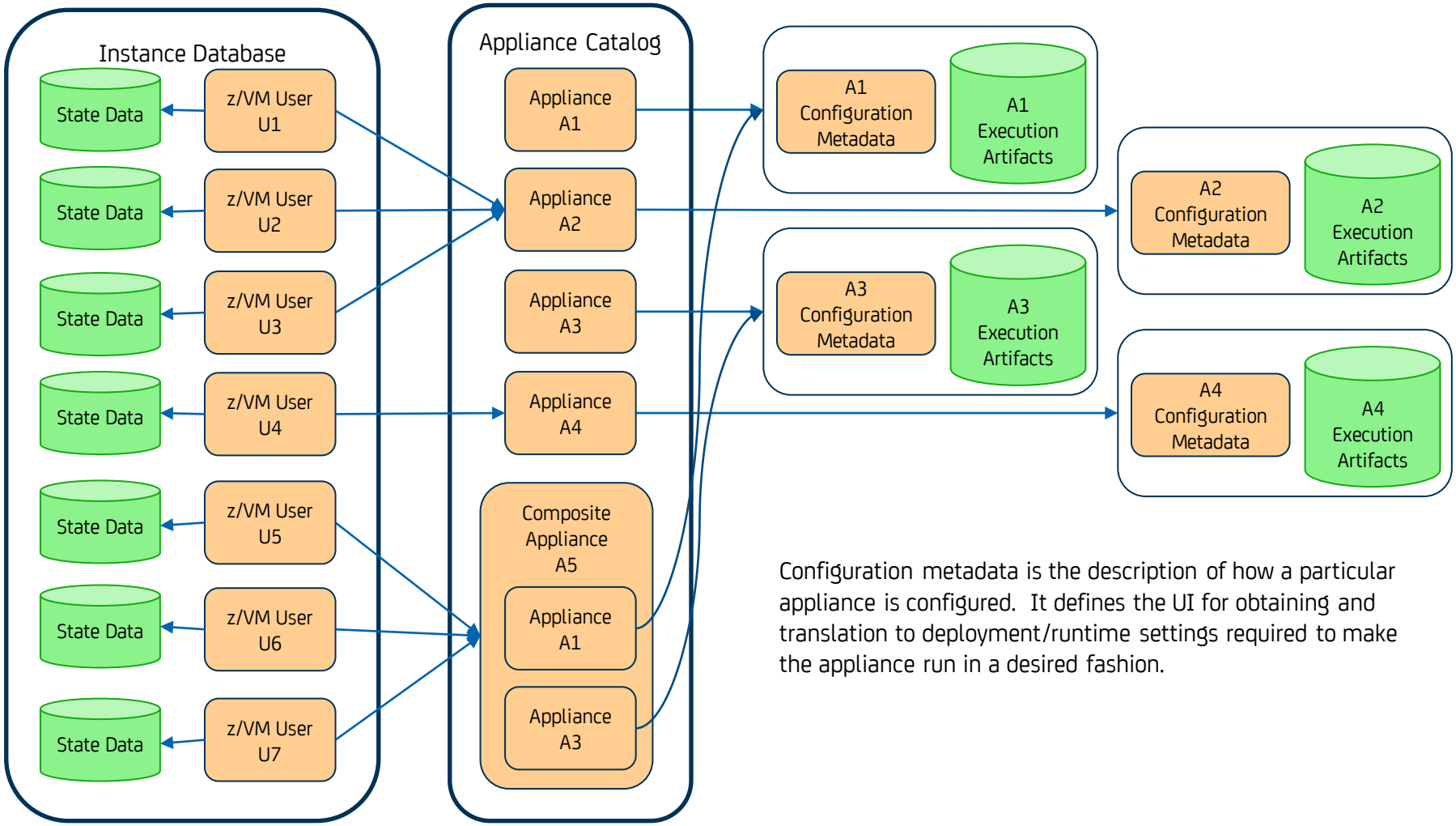
relationships between elements

- A fully functional appliance requires a stack, that includes an underlying operating system as well as (potentially) middleware and an application
- Each element in the “stack” has
  - Executable code
  - Configuration that influences an instance of that code to work in a specific way
  - Configuration that makes the instance unique within a domain (may be inherited from a lower level in the stack)
  - Dependencies on the elements below it in the stack
    - These dependencies are both on “what” software is below (e.g. a particular version/release of software) them and “how” that software is configured for execution (e.g. software must be configured with no fewer than five widgets)
    - In some cases, the dependency is to obtain data from the underlying configuration (inheritance) to conform the application to the underlying middleware or operating system instance
  - *From a purists perspective, it would be helpful if elements only had dependencies on the next lower entity, but often this is not possible*

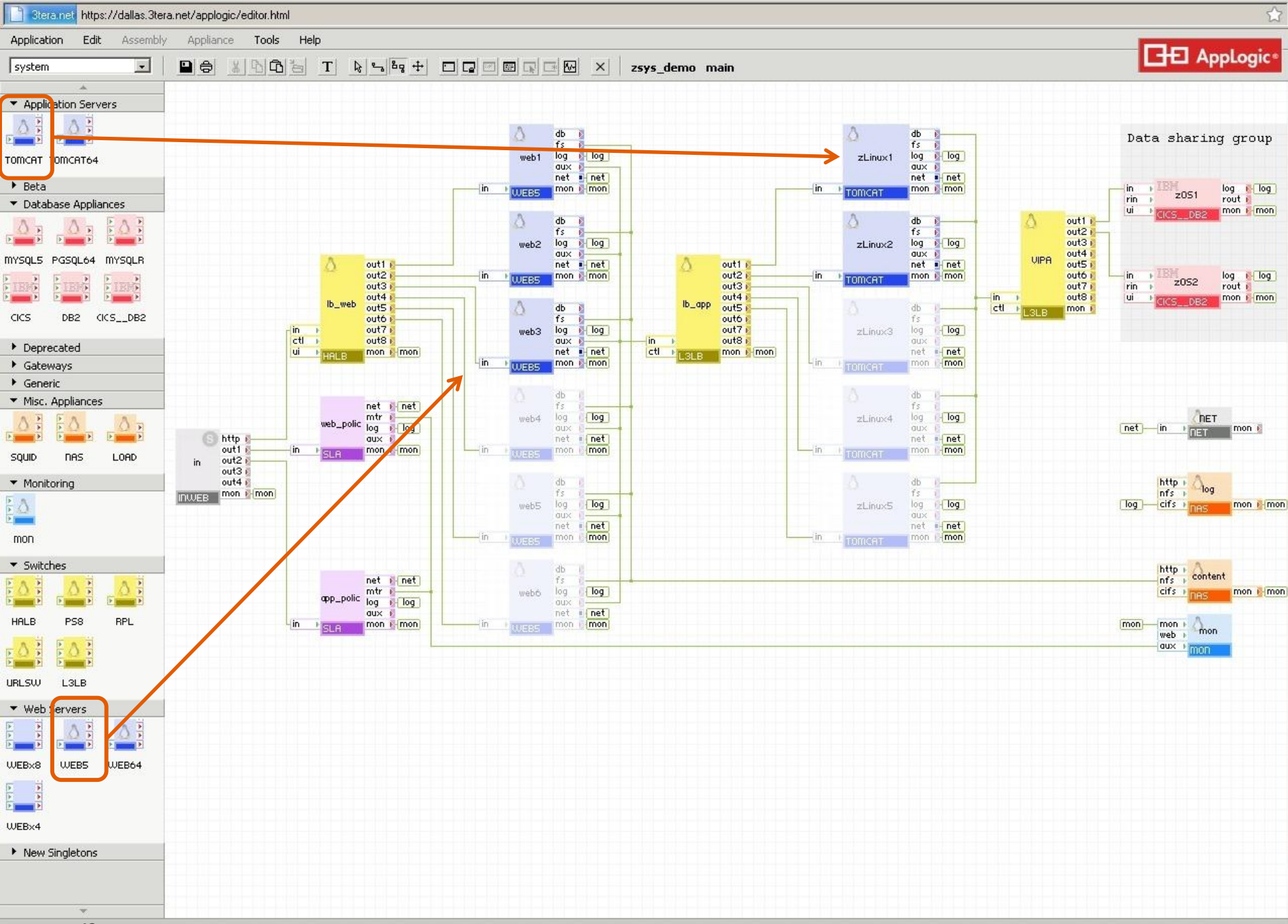
appliance implementation



appliance implementation

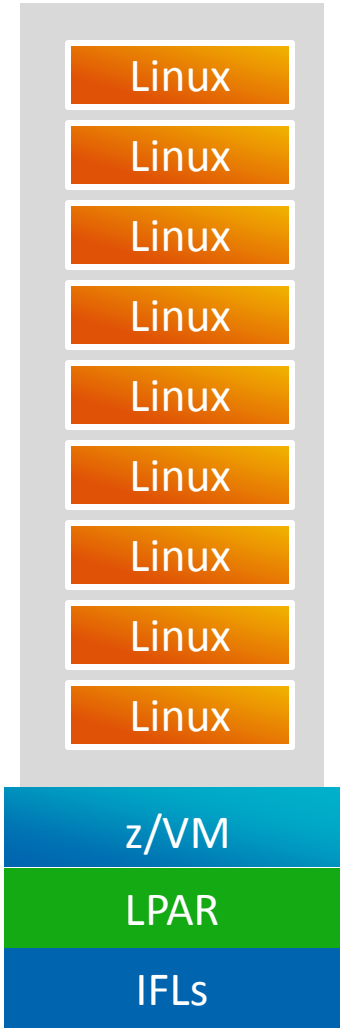


Configuration metadata is the description of how a particular appliance is configured. It defines the UI for obtaining and translation to deployment/runtime settings required to make the appliance run in a desired fashion.



Done

multiple applications varying resource requirement



No Grid

Without AppLogic

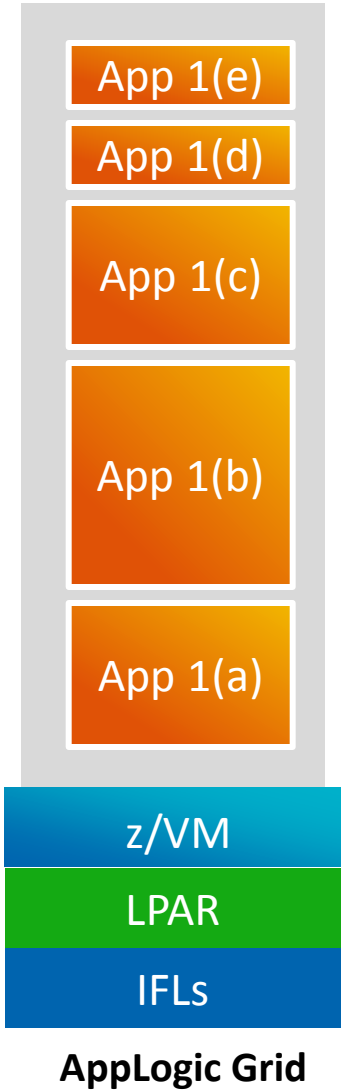
- Standard Linux Images
- No relationship between images
- No application concept

With AppLogic

- Elastic compute environment
- Not just OS images
- Virtual business services
- Scale up/down easily
- Hybrid applications

AppLogic Grid

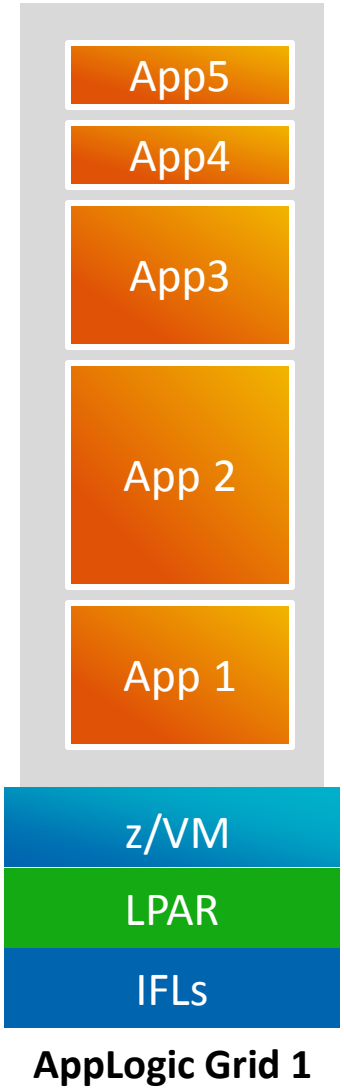
multi tenant application



AppLogic Grid

- Easily deploy multi-instance applications
- Size instances based on end user need
- Start and stop on demand (self service)
- Scale up/down instances dynamically

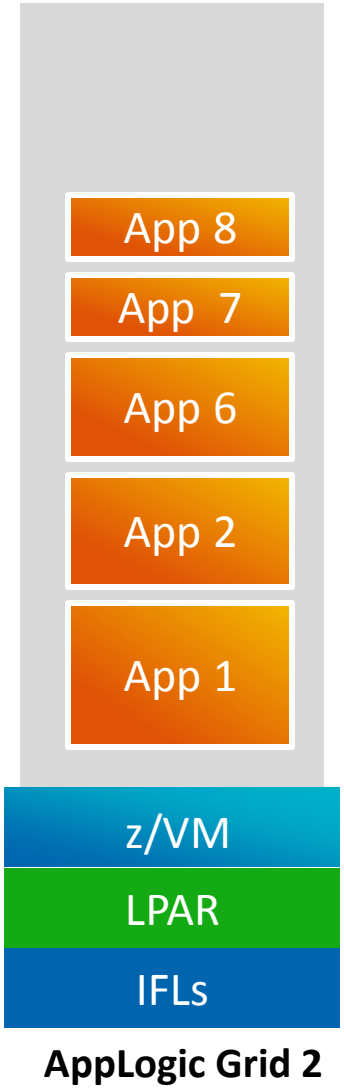
multiple apps, application movement



AppLogic Grid 1

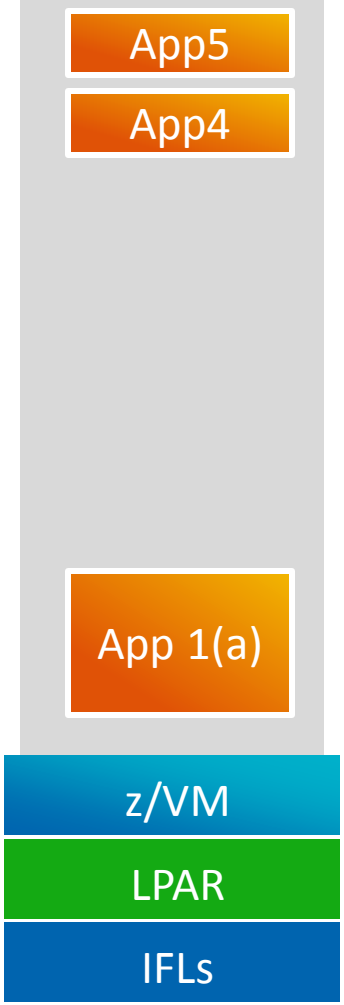
Migration between grids

- On demand application movement
- Start instances of same application on multiple IFL's
- Scale up individual instances of the same application
- Move different applications between IFLs based on priority, resource needs, compliance requirements, test/prod, etc.



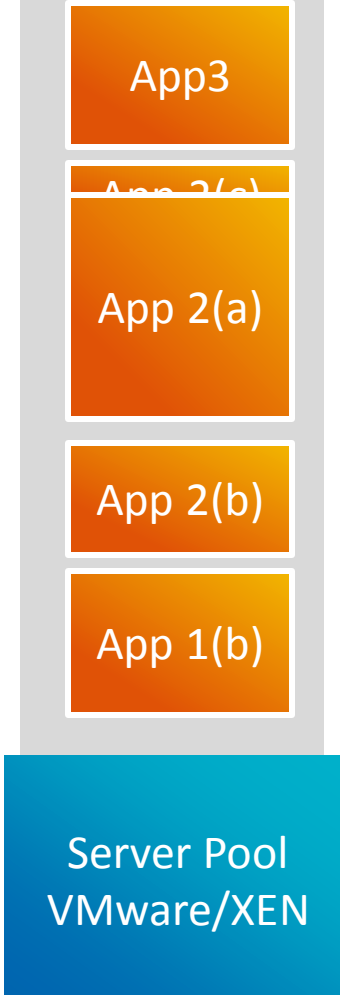
AppLogic Grid 2

application movement, cross platform



Migration between hardware platforms

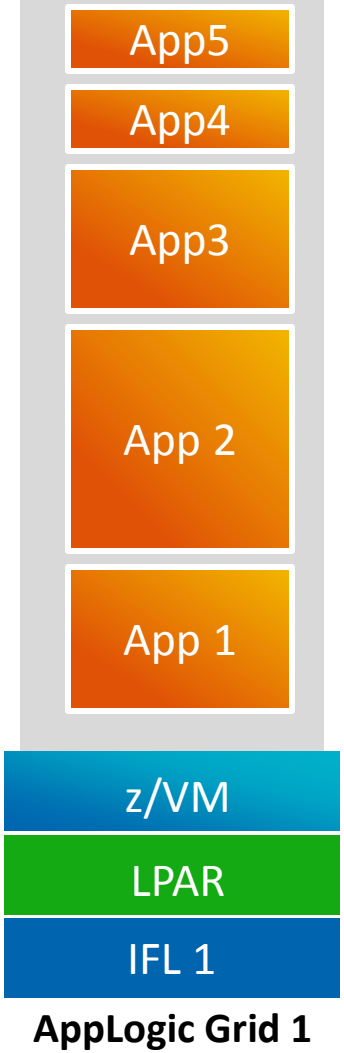
- On demand application movement
- Start instances of same application on multiple platforms
- Move different applications between platforms based on SLA's, cost, performance criteria, customer requirements, reliability, etc.



AppLogic Grid 1 On System z

AppLogic Grid 2 On x86

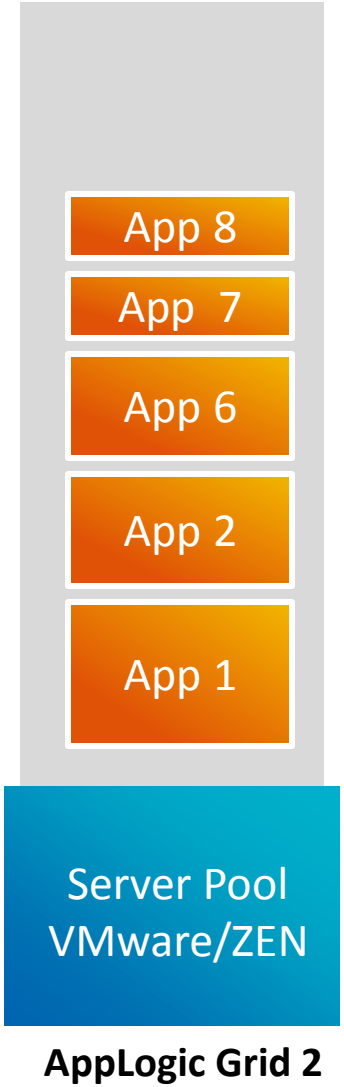
application movement, cross platform



AppLogic Grid 1

Migration between platforms

- On demand application movement
- Start instances of same application on multiple platforms
- Move different applications between platforms based on SLA's, cost, performance criteria, customer requirements, reliability, etc.



AppLogic Grid 2

CA Applogic architecture

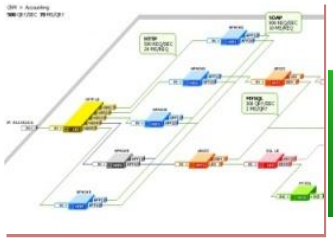
Central Services

Inventory

Usage Metering

Availability

Events



Dashboard

Editor

CLI Shell

Appliances

Assemblies

App Stacks

Runtime

Object Manager

Build sys

Scheduler

Catalyst

Catalog

Appliances

Assemblies

App Stacks

Ready Apps

Fabric

membership

VMM

Integrated SAN

Secure Network

diagnostic monitoring

Backbone Fabric Controller

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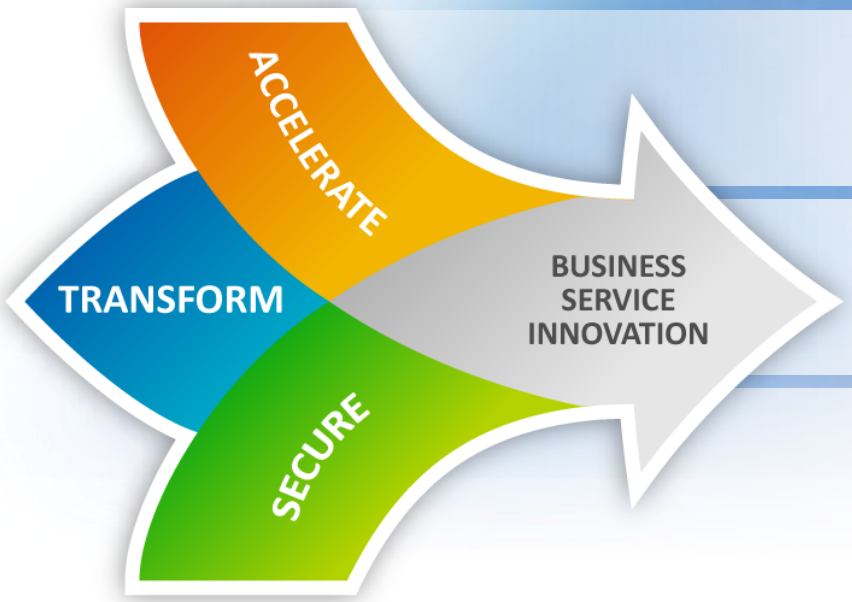
summary

accelerating, transforming and securing IT for business service innovation



Deliver innovation and value of cloud with service virtualization and virtual business services

Accelerate hybrid cloud delivery with heterogeneous automation and service orchestration across any kind of platform

More safely leverage public clouds with the industry's leading security and assurance solutions for continuous service delivery

the shadow of the cloud

UNCONTROLLED ADOPTION

SLOWDOWNS & OUTAGES

LOSS OF CONTROL

DISCONNECTED SILOS

MANUAL INTERVENTION

SECURITY AND COMPLIANCE

the cloud challenge

Enable innovation while managing complexity, controlling cost and mitigating risk

why CA Technologies for cloud solutions?

- **Unified cloud service delivery providing choice across:**
  - heterogeneous environments, and
  - IAAS, Applications/SAAS and Services

- **Fast time to value**
- **Highly open, extensible and flexible**
- **Full Cloud Service Lifecycle Management**

IDC *Analyze the Future*

CA Technologies was named one of the top two market share leaders in the worldwide cloud systems management software market by IDC, a leading provider of global IT research and advice.

IDC, Worldwide Cloud Systems Management Software 2011–2015 Forecast Update and 2010 Vendor Shares | Doc # 231493 | Nov 2011

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Thank you

Please come visit us at the CA Technologies booth in the SHARE Technology Exchange

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