A SUNNY OUTLOOK FOR CLOUD COMPUTING WITH SAS

ALEXANDER DAEHNRICH
GLOBAL PROGRAM DIRECTOR
TECHNOLOGY & ALLIANCES

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

CUSTOMER TRENDS

- **“Virtualization first”**
  - Internal standard
  - Private clouds
- **“Off-premise” is OK**
  - Outsource
  - Managed services
  - Contract “expert services”
- **Embrace cloud**
  - Cost model – reserve capital
  - Faster “time to value”
  - Collaboration

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

sas THE POWER TO KNOW.

MARKET TRENDS – CLOUD COMPUTING

Software Industry Megatrend

IDC Analyze the Future

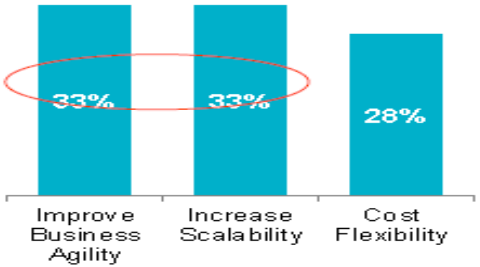
70% of NA companies currently using public cloud

74% of companies using cloud expect to increase cloud spend in 2012 by **> 20%**

US Businesses will spend **$36 billion** on cloud-delivered IT services in 2015

2011-2015:

- SaaS spending will grow by **105%**
- IaaS spending will top **$33 billion**
- PaaS spending CAGR hits **48.5%**



82% of net new commercial apps will be developed for cloud in 2012

30%+ of 2014 spending on enterprise apps will be via the cloud model

>80% of Global 2000 will still have 50% of IT onsite in 2020

Source: IDC NA Cloud Computing Survey, January 2011 n=603, and IDC #228845 (June 2011)

© 2009 IDC

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.
sas THE POWER TO KNOW.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (US)

Cloud Computing Standards

5

CHARACTERISTICS

- On-Demand Self Service
- Broad Network Access
- Measured Service
- Resource Pooling
- Rapid Elasticity

3

SERVICE MODELS

- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)

4

DEPLOYMENT MODELS

- Private Cloud
- Public Cloud
- Hybrid Cloud
- Community Cloud

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

sas THE POWER TO KNOW.

SAS CLOUD INITIATIVE

Why

GET IT QUICKER

- Fastest path to go from “I want it” to “I am using it”

DO IT EFFICIENTLY

- Reduced and more flexible acquisition, support, and maintenance options

DRIVE THE ENGINE

- Speed of Innovation
- Enable customers & partners to build solutions

How

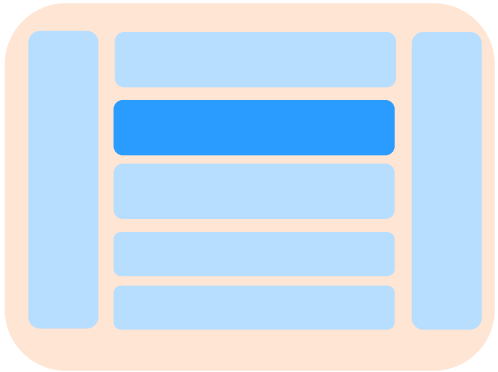
DELIVER A CLOUD ENABLED PLATFORM

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

sas THE POWER TO KNOW.

SAS VIRTUAL APPLICATIONS

GET IT QUICKER



A **virtual application (vApp)** is:

A set of virtual machines

- Compose a multi-tier application

Operational Policies and Service Levels

- Initial deployment
- Management Policies
- Simplified ongoing maintenance

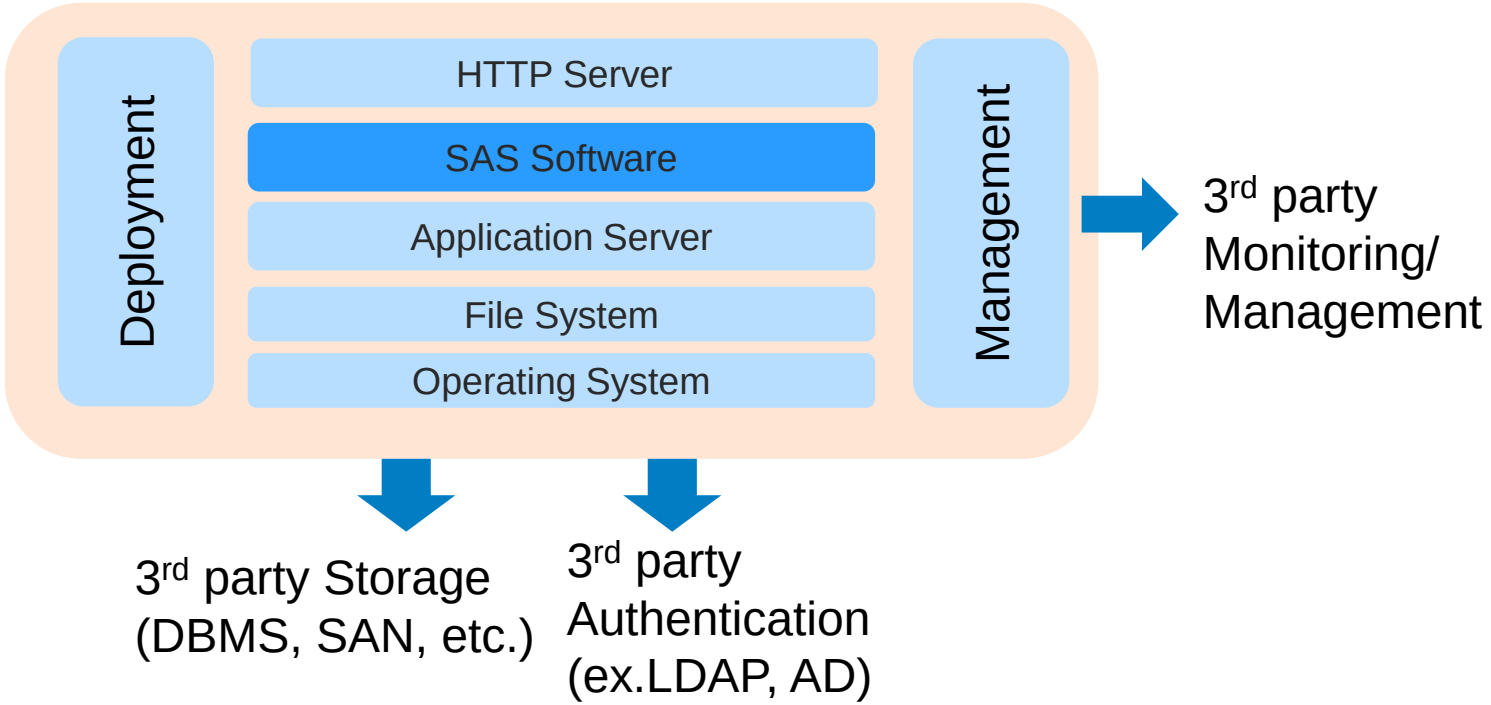
Encapsulated in an OVF format

- Standard format supported by all major Virtualization vendors

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

SAS VIRTUAL APPLICATIONS

Topology and Packaging

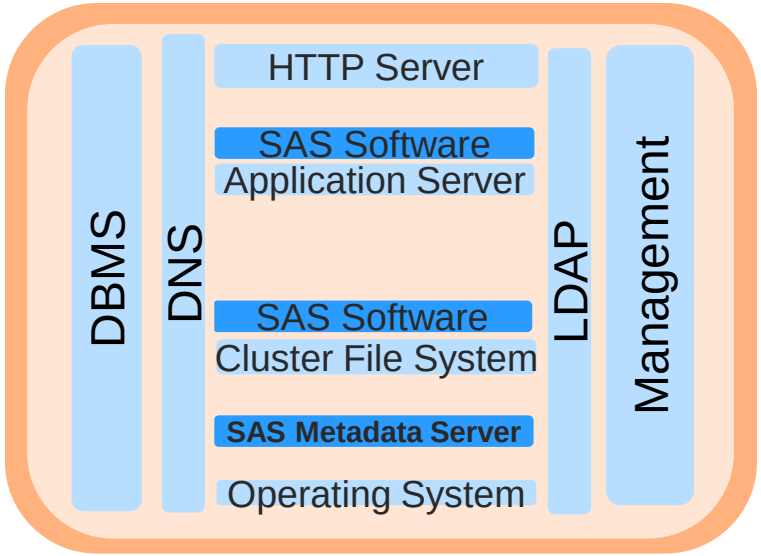


Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

Topology and Packaging

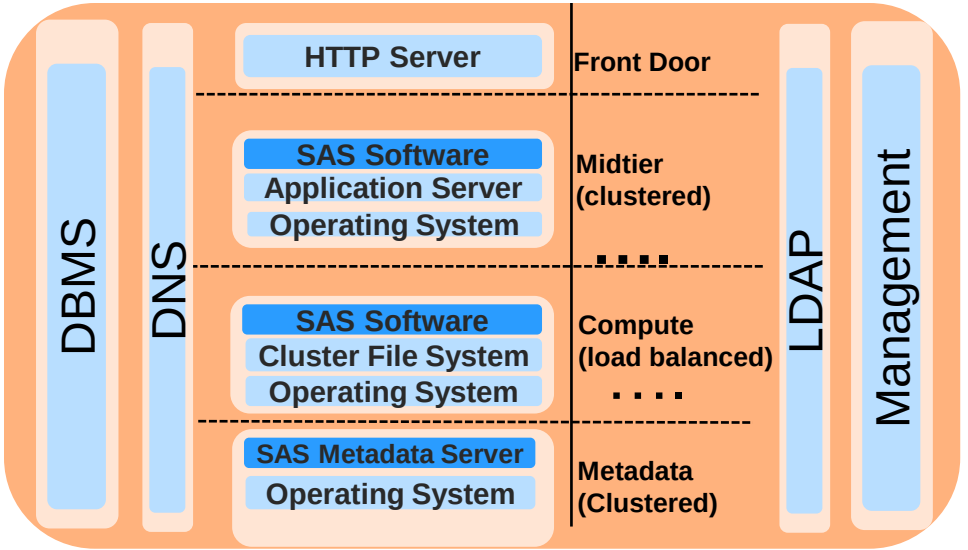
Workgroup

1 vApp=1-2 VMs



Enterprise

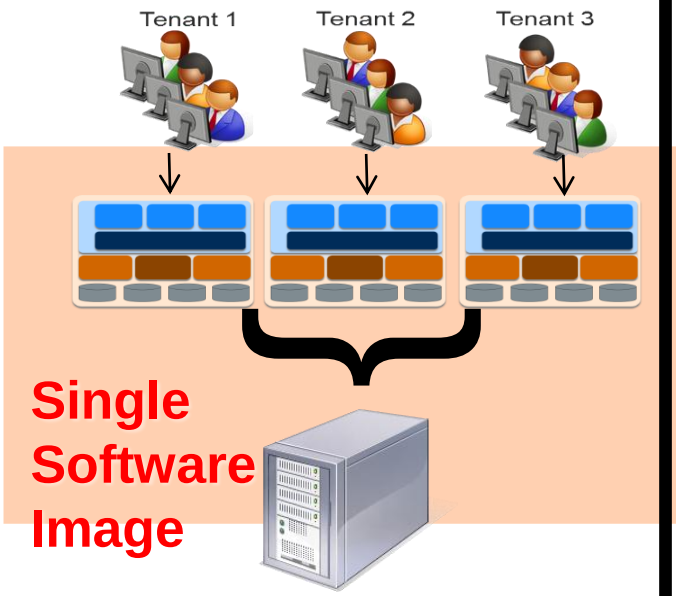
1 vApp=n VMs



Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

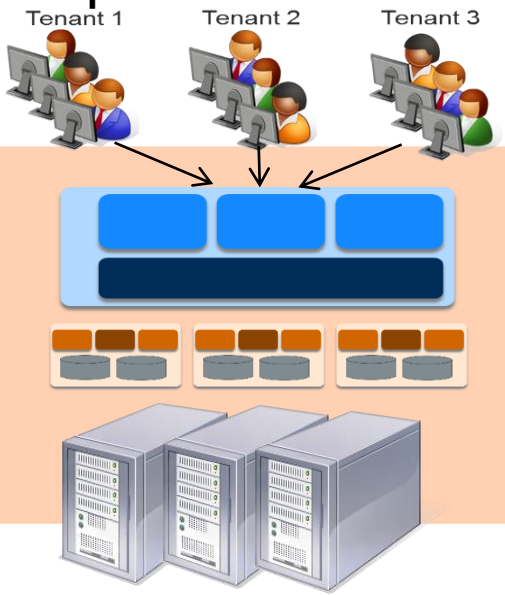
SAS VIRTUAL APPLICATION DEPLOYMENT MODELS

Separate (Virtual) Infrastructure



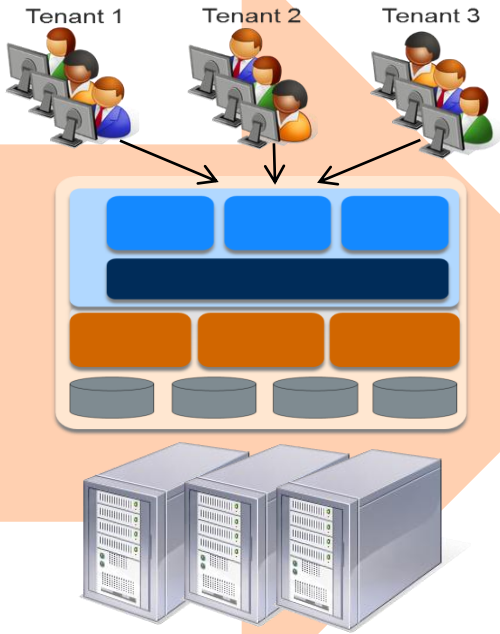
Level 1

Hybrid: Shared apps, separate SAS servers



Level 2

Full Multi-Tenancy



Level 3

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

SAS CLOUD INITIATIVE

Why

GET IT QUICKER

- Fastest path to go from “I want it” to “I am using it”

DO IT EFFICIENTLY

- Reduced and more flexible acquisition, support, and maintenance options

DRIVE THE ENGINE

- Speed of Innovation
- Enable customers & partners to build solutions

How

DELIVER A CLOUD ENABLED PLATFORM

MANAGE SAS APPLICATIONS IN THE CLOUD

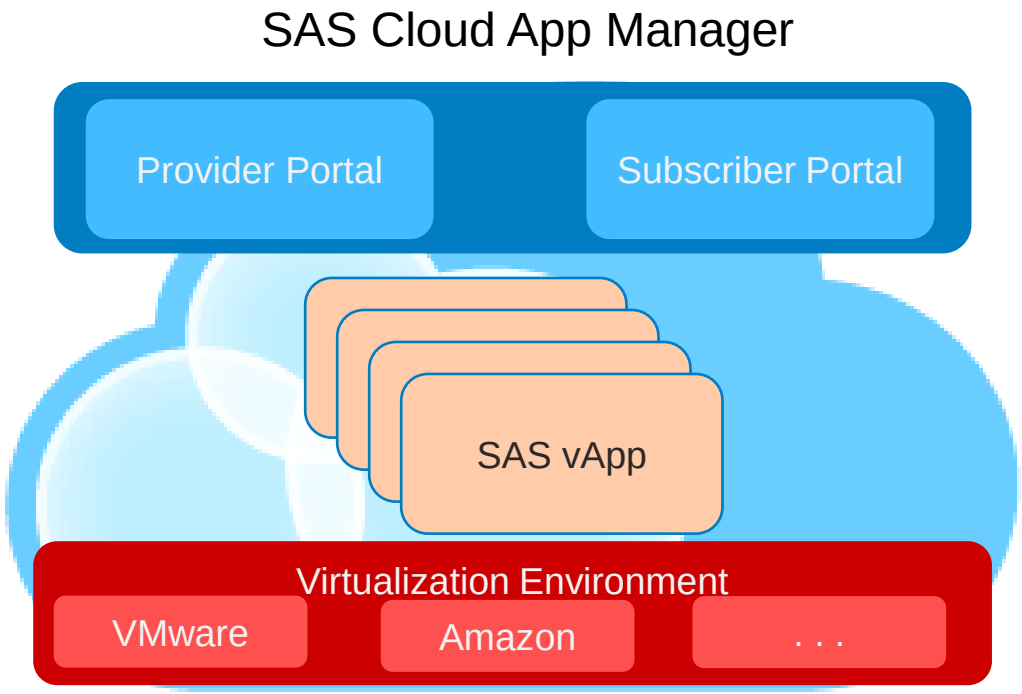
Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

sas THE POWER TO KNOW.

SAS CLOUD INITIATIVE

MANAGING SAS IN THE CLOUD

COMPONENTS FOR MANAGING A SAS-ENABLED CLOUD



Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

sas THE POWER TO KNOW.

SAS CLOUD INITIATIVE

PROVIDERS

PROVIDER ROLE HAS NEW IMPORTANCE IN THE CLOUD

CAPABILITIES

Asset management

Tenant management

Contracting & billing

SLA management

Provisioning integration

WHY IT MATTERS

Fast service

Efficient IT processes

Serve many customers

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

sas THE POWER TO KNOW.

SAS CLOUD INITIATIVE

SAS Administrator

SAS ADMINISTRATOR ROLE EVOLVES IN THE CLOUD

CAPABILITIES

Subscribe/purchase
User management
Application customization

Monitoring
Auditing
SLA reporting

WHY IT MATTERS

Front door
Self-service
Fast Start-up

Operational management

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

sas THE POWER TO KNOW.

SAS CLOUD INITIATIVE

Why

GET IT QUICKER
- Fastest path to go from “I want it” to “I am using it”

DO IT EFFICIENTLY
- Reduced and more flexible acquisition, support, and maintenance options

DRIVE THE ENGINE
- Speed of Innovation
- Enable customers & partners to build solutions

How

DELIVER A CLOUD ENABLED PLATFORM

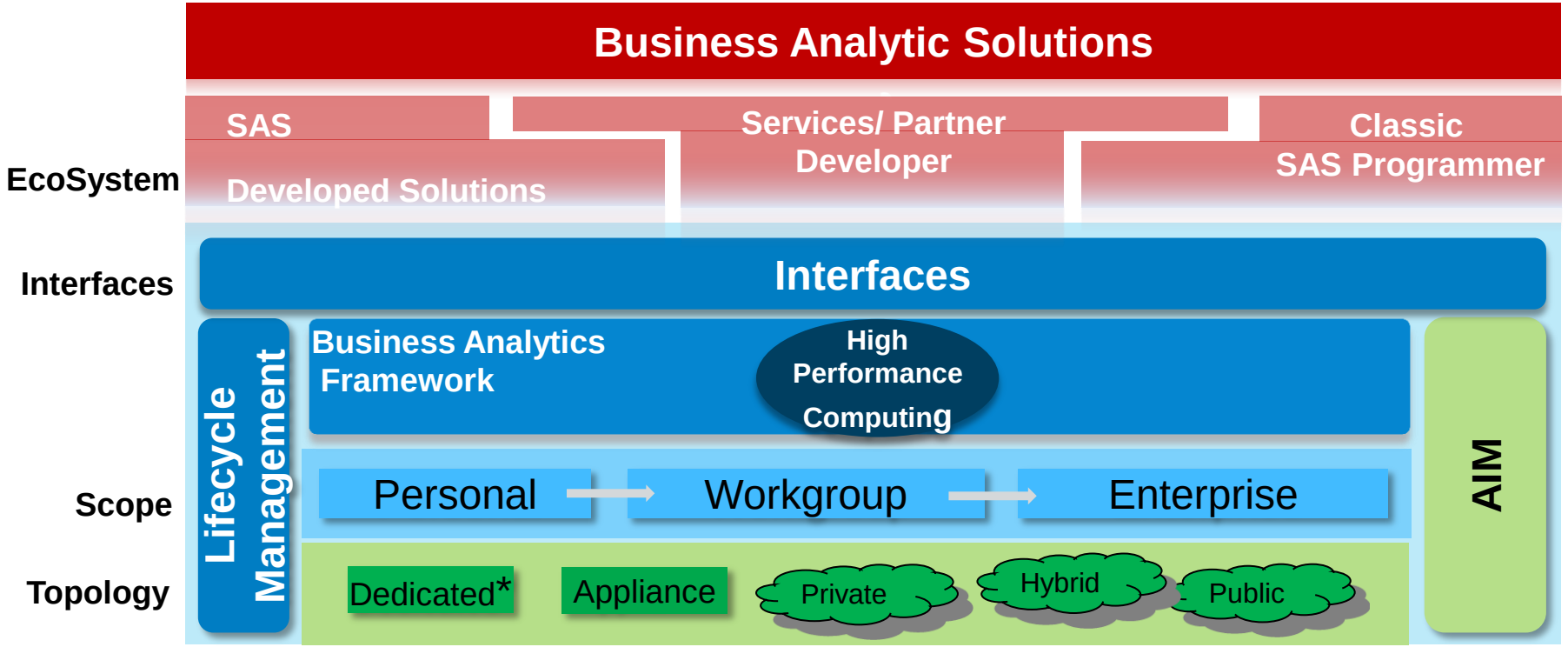
MANAGE SAS APPLICATIONS IN THE CLOUD

BUILD AND DISTRIBUTE APPS IN THE CLOUD

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

sas THE POWER TO KNOW.

BUSINESS ANALYTIC FRAMEWORK POWERED BY SAS PLATFORM AS A SERVICE



Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

SAS CLOUD INITIATIVE

Developers

Users

Partners

Developer Enablement

CAPABILITIES

SAS SDK & API

Custom application development

Solution extension and integration

Collaboration & team programming

WHY IT MATTERS

Empowers key developers

1. SAS Programmers
2. Java/Web Developers
3. Business Analysts

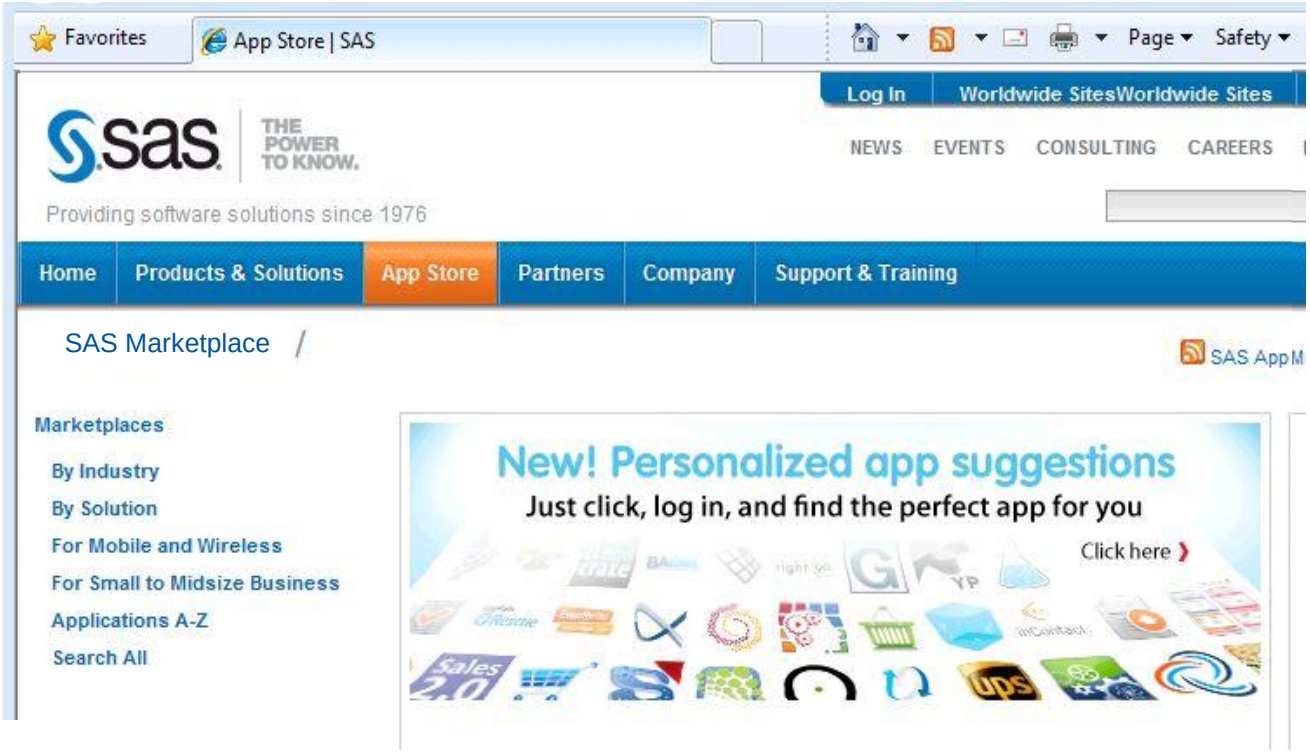
Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

SAS CLOUD INITIATIVE

Marketplace emerges

SAS MARKETPLACE

Innovation



Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

SAS CLOUD INITIATIVE

SAS 9.4

THE PATH FORWARD ….

1. Infrastructure Enhancements
   - Mid-tier infrastructure standardization
   - New services
   - Consolidated monitoring and management

2. Flexible deployment options
   - On-premise
   - Virtual environments

3. Leveraging virtualization
   - Building virtual applications
   - Managing SAS in a virtual environment

4. Developer enablement
   - SAS Software Development Kit (SDK)
   - Web-based IDE's
   - Collaboration and sharing

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

SAS CLOUD INITIATIVE

A Sunny Outlook for Cloud Computing with SAS

SAS CLOUD APP MANAGER

SUBSCRIBER PORTAL

PROVIDER PORTAL

SAS MARKETPLACE

SAS 9.3 Sample vApp

SAS 9.3 Sample vApp

SAS 9.4 Sample vApp

SAS Platform as a Service

NEW SOLUTION

NEW SOLUTION

SAS 9.3

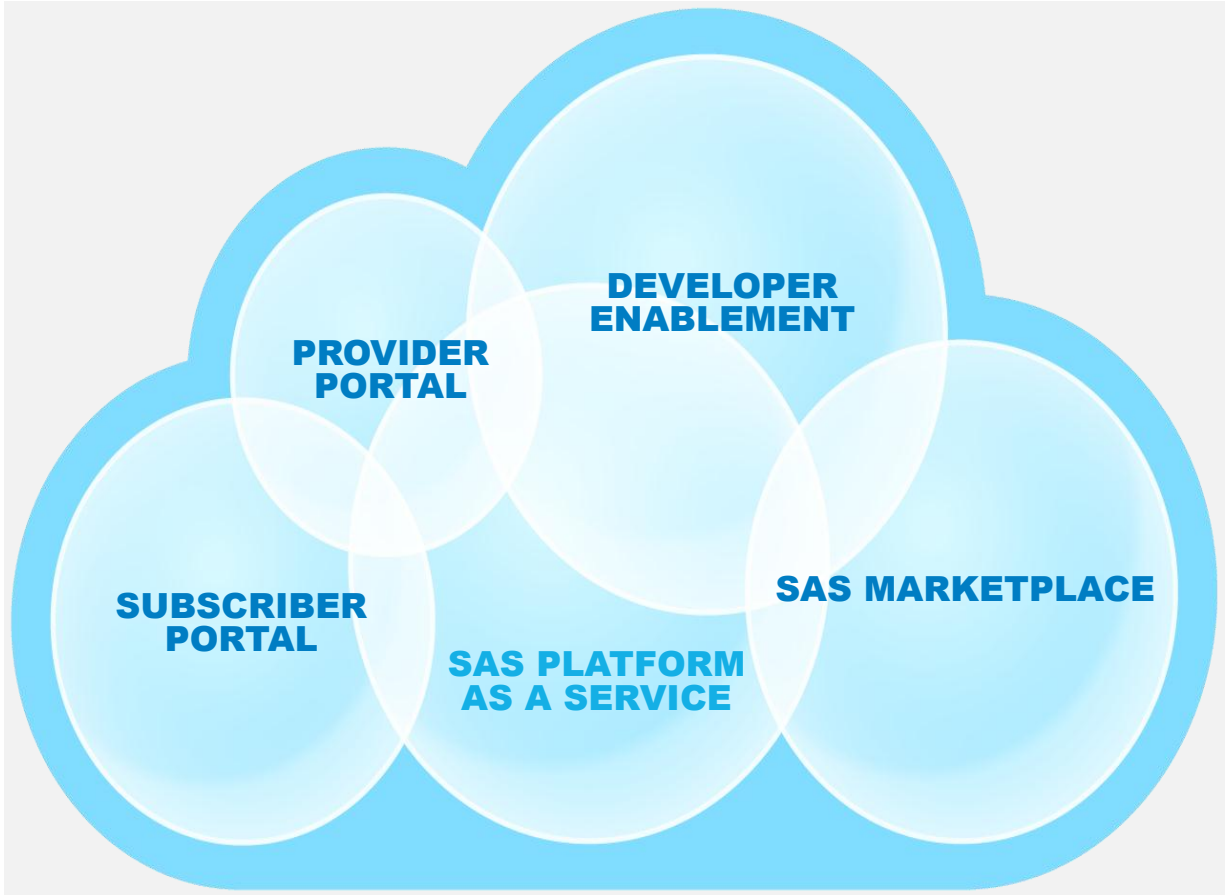
SAS 9.4

Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.

SAS CLOUD INITIATIVE

Thank You!

Questions?



Company Confidential - For Internal Use Only
Copyright © 2012, SAS Institute Inc. All rights reserved.