Agile Development Cloud

May 21, 2012

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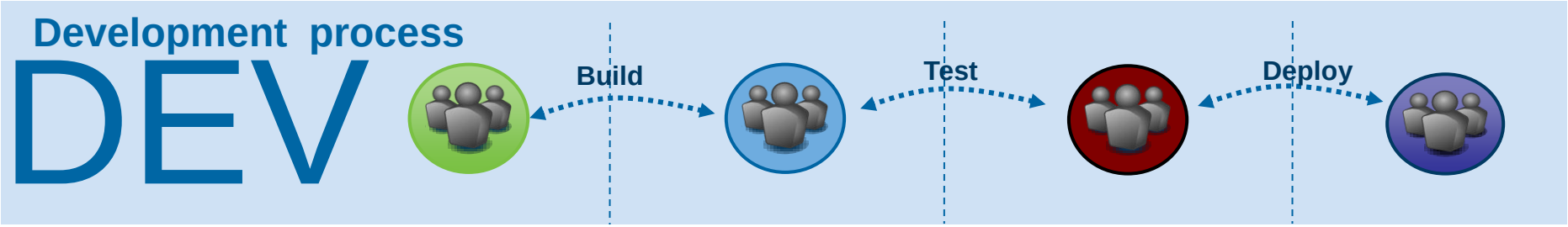
Agenda

- Application Development Challenges
  - Dev process and infrastructure issues
- Agile Development Cloud from Eucalyptus & Electric Cloud
  - Best-in-class infrastructure cloud
  - Automated development process with integrated resource management
- Q&A

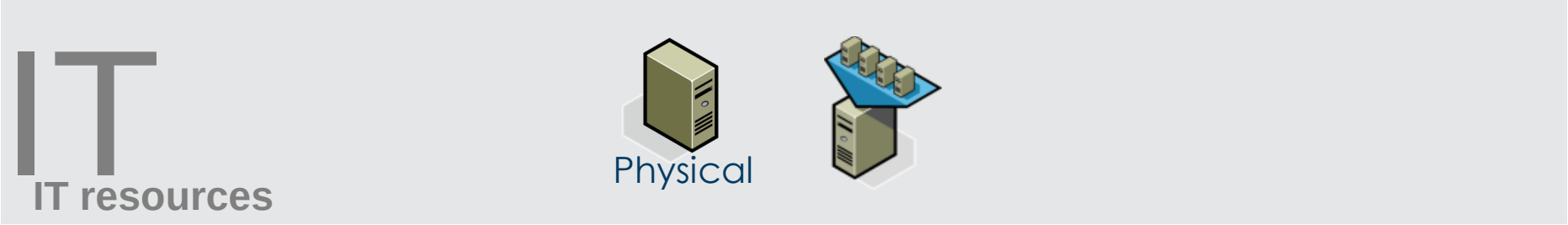
The Development Process is Complex

electric CLOUD



Manual process with many handoffs

Dedicated resources

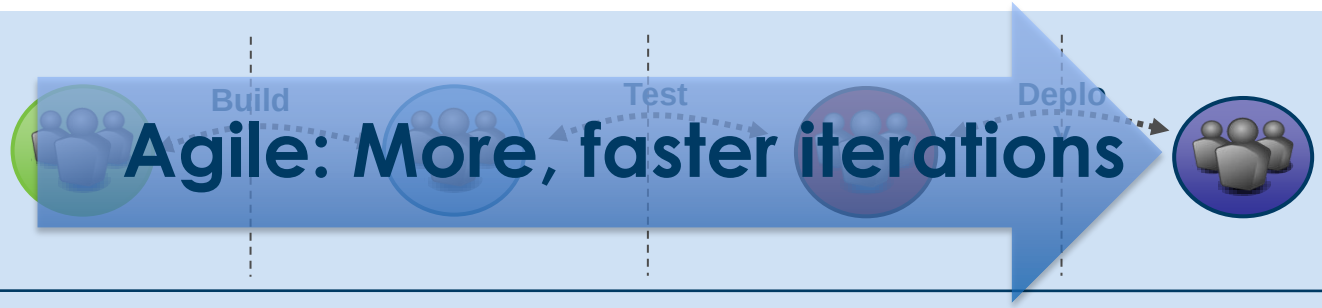


EUCALYPTUS

…and Increasing in Complexity

electric CLOUD

DEV

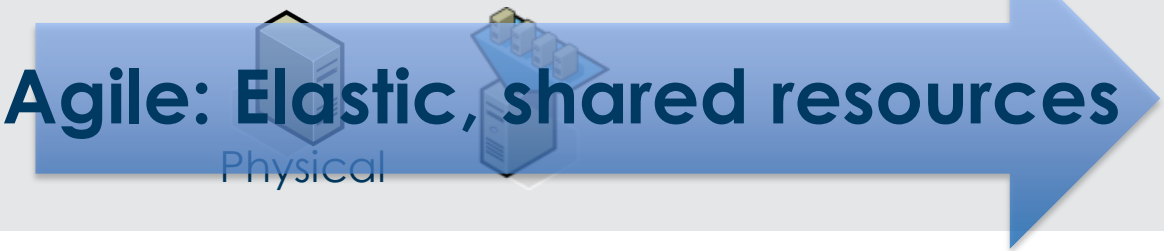


More platforms

More tools

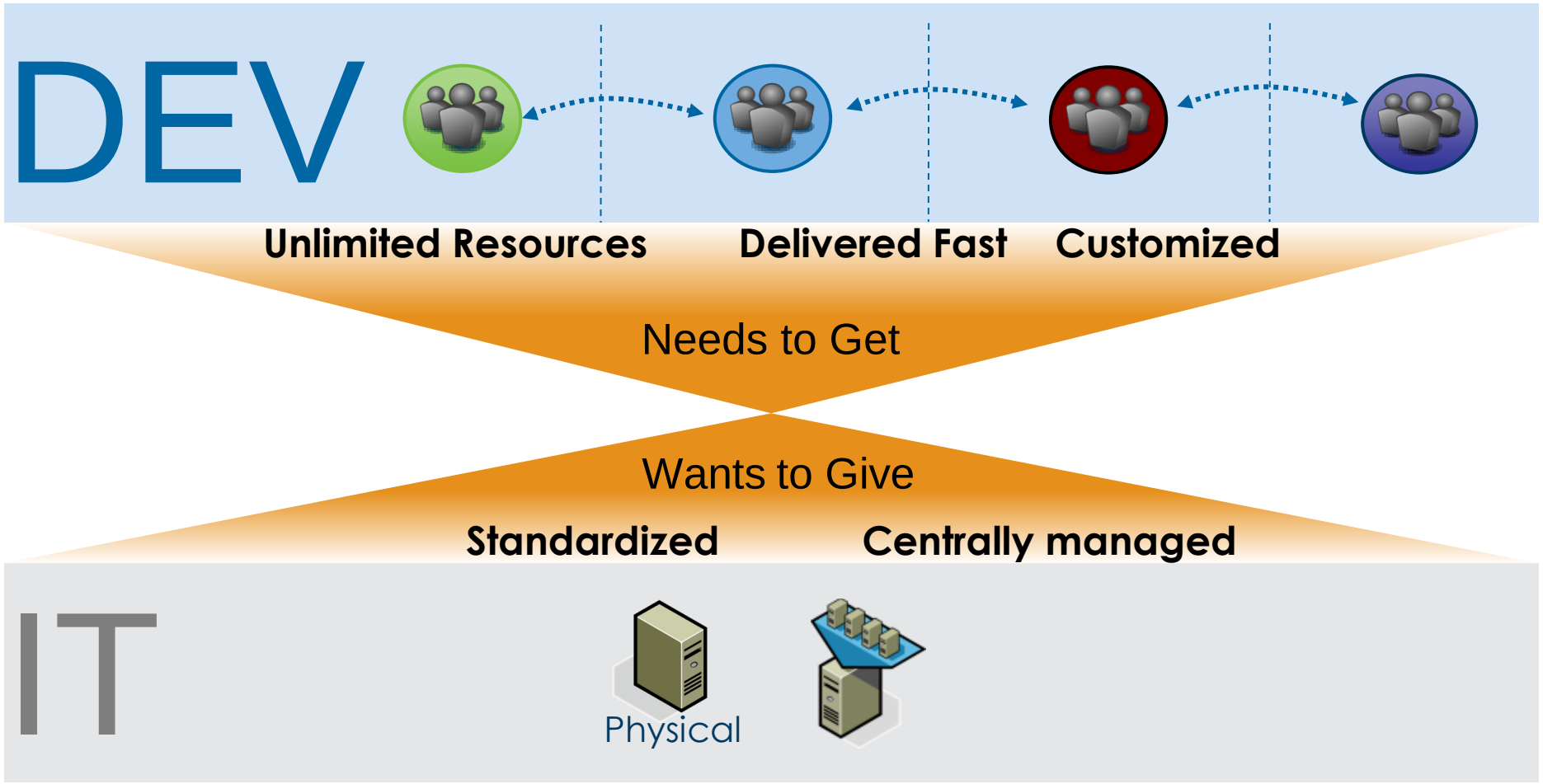
More teams

IT



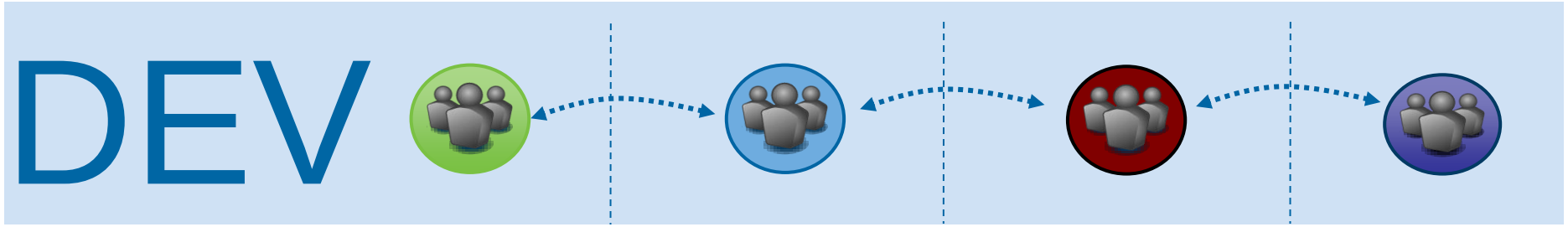
EUCALYPTUS

Dev Resource Needs Are Growing



The Impact of Manual Process & Non-optimal Resource Management

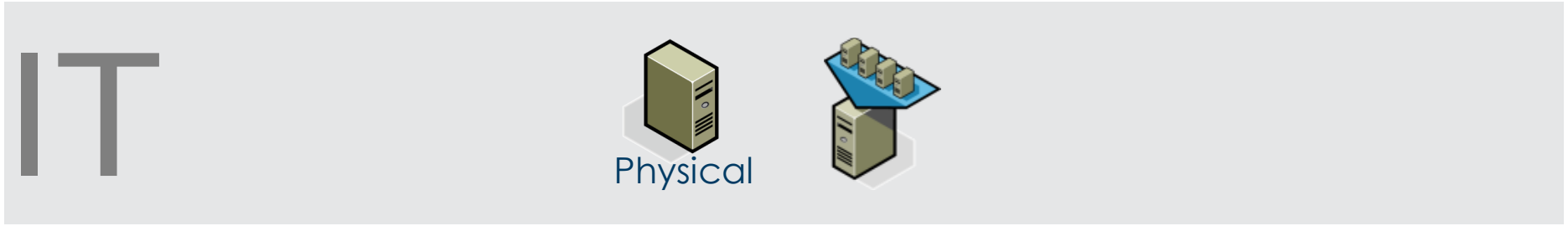
electric CLOUD



Slow TTM

Poor Software Quality

Poor resource Utilization



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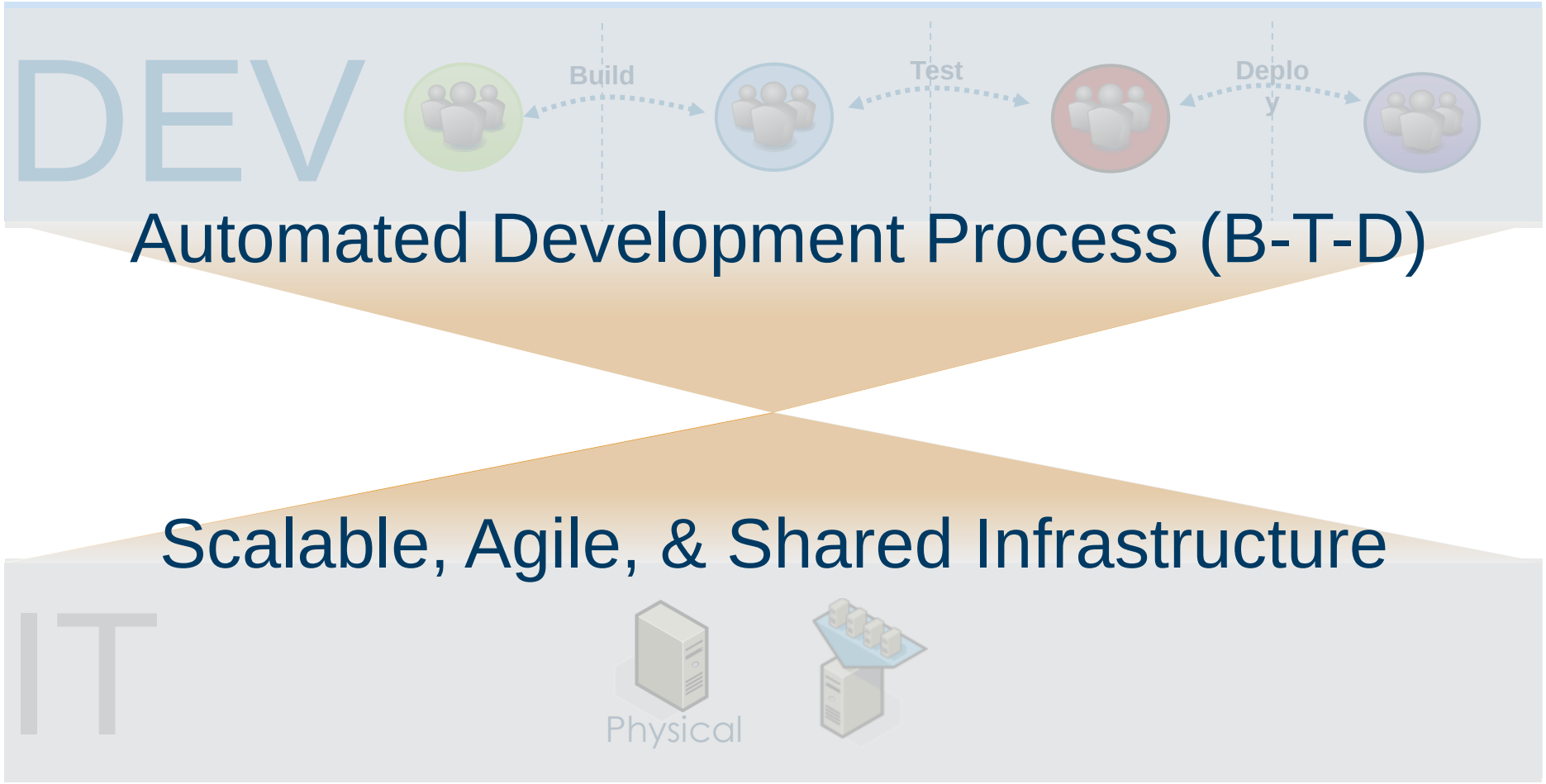
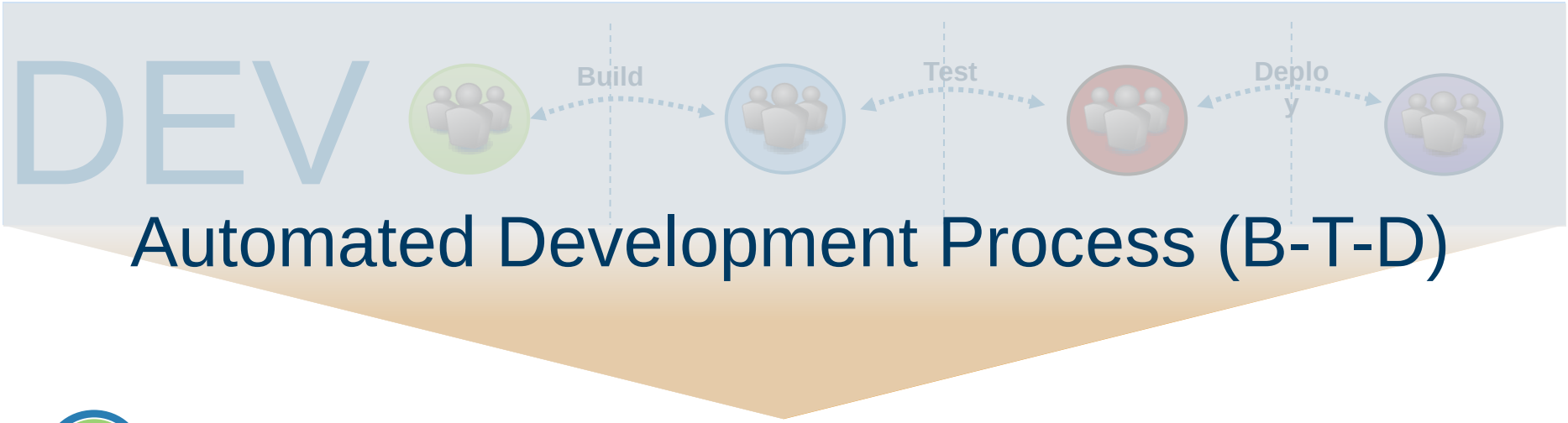
What is Needed?



7 Steps To Get There



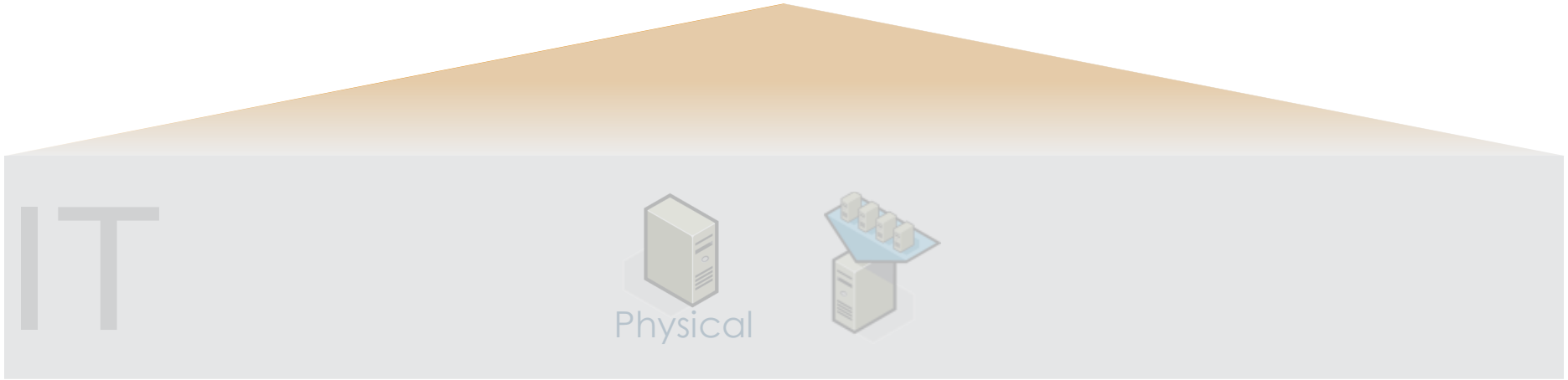
Automated Development Process (B-T-D)

1. Model/Map your Software Development Process
2. Enable Automation of your Software Delivery Procedures
3. Report and Analyze Process Execution and Workflow

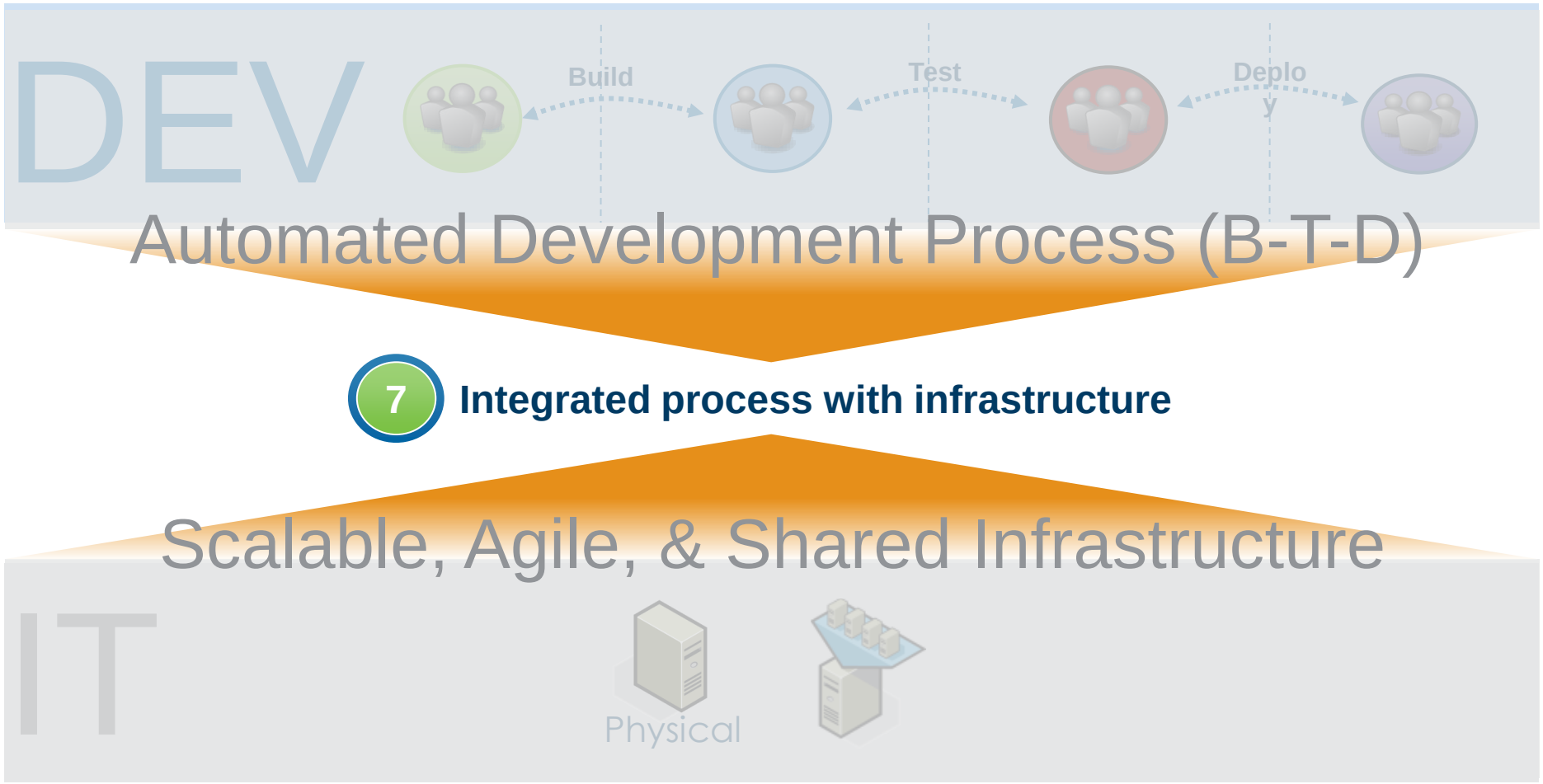
7 Steps To Get There

Scalable, Agile, & Shared Infrastructure

4. Define Valuable Infrastructure Services
5. Plan and Standardize the Cloud Platform
6. Plan and Architect the Deployment

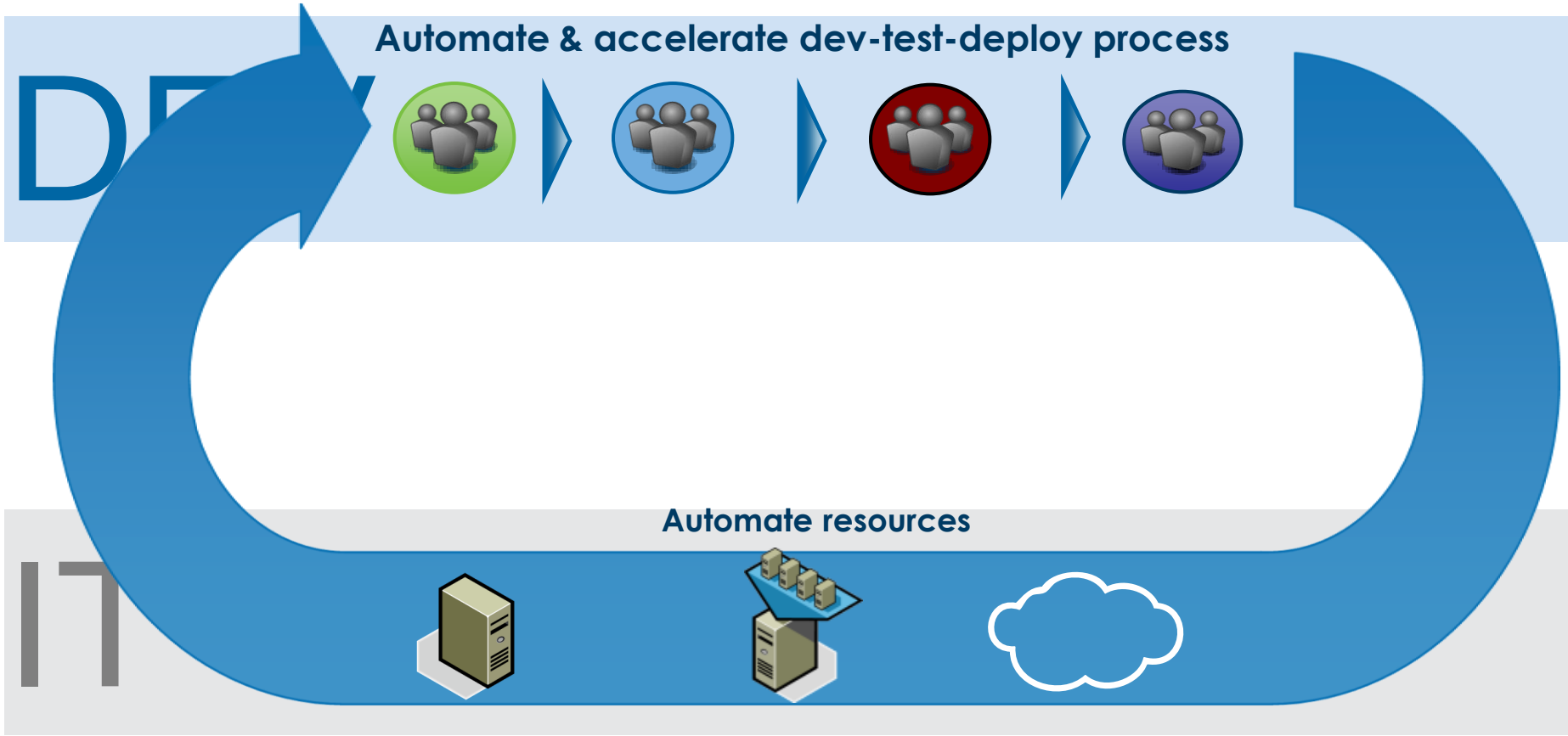


7 Steps To Get There



Electric Cloud: Dev Cloud Automation

Automates end-to-end process & resources



Dev & Cloud Tools Integration	Resource Management	Dev Process Acceleration	Analysis & Reporting	Enterprise Scale, Security, Re-use

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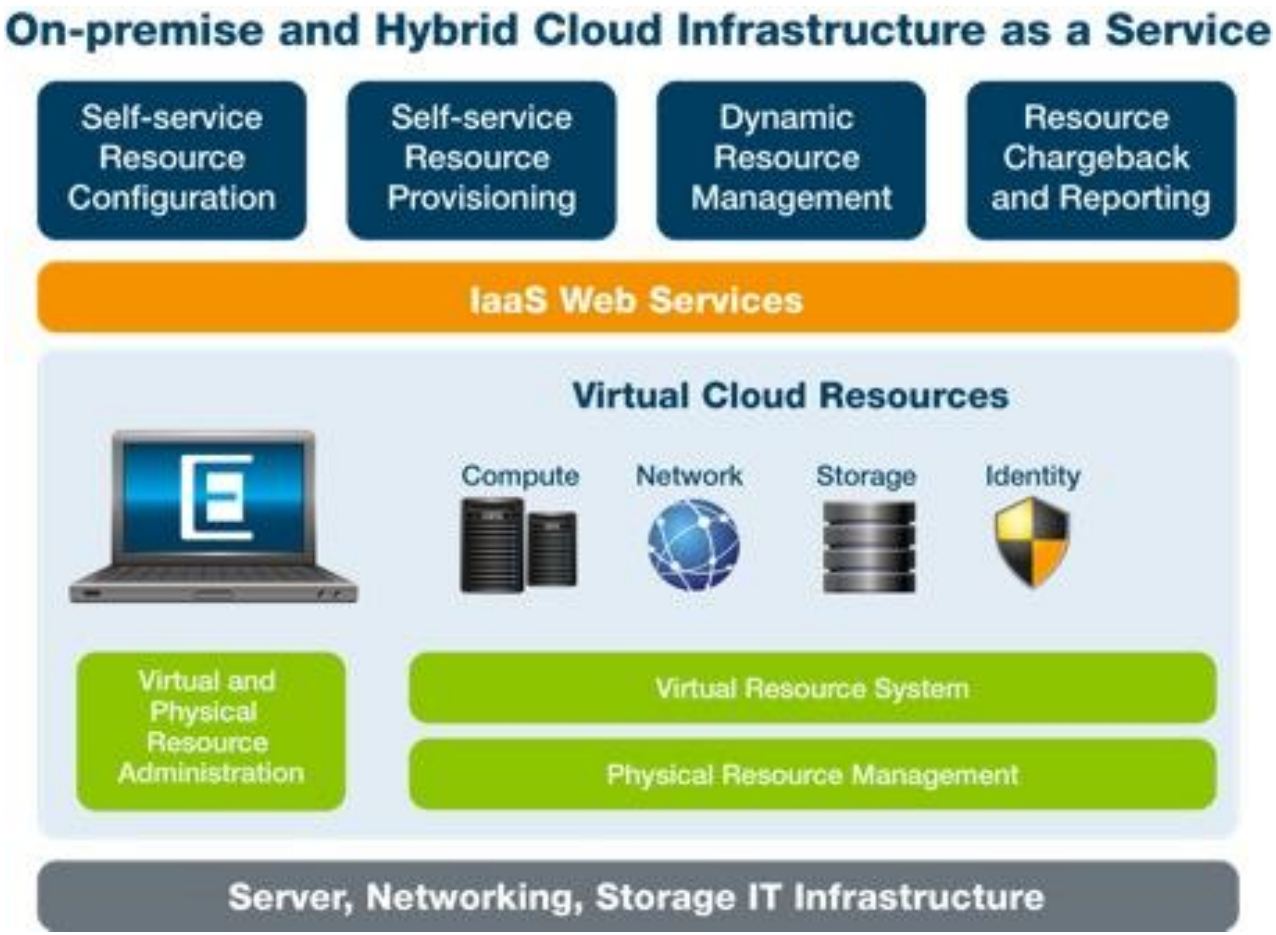
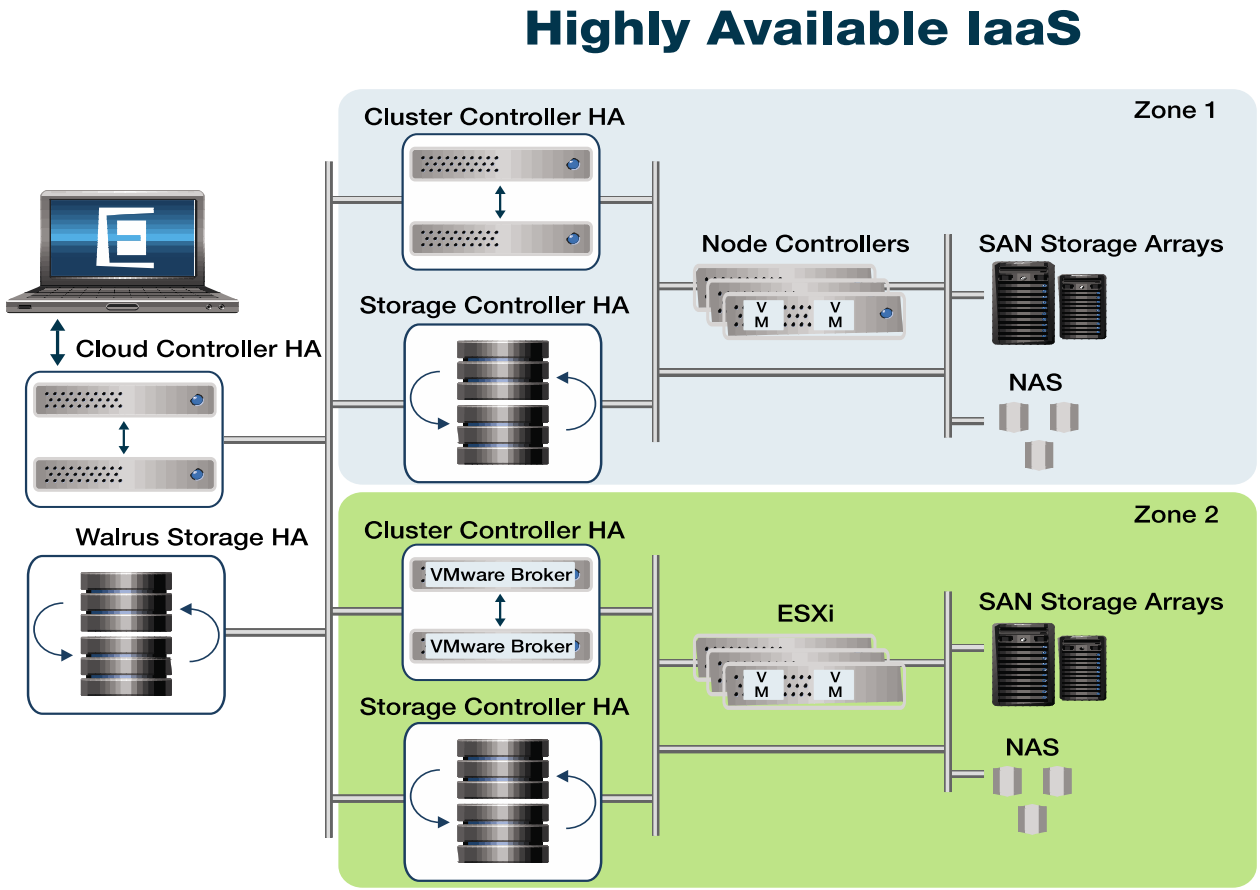
Eucalyptus IaaS



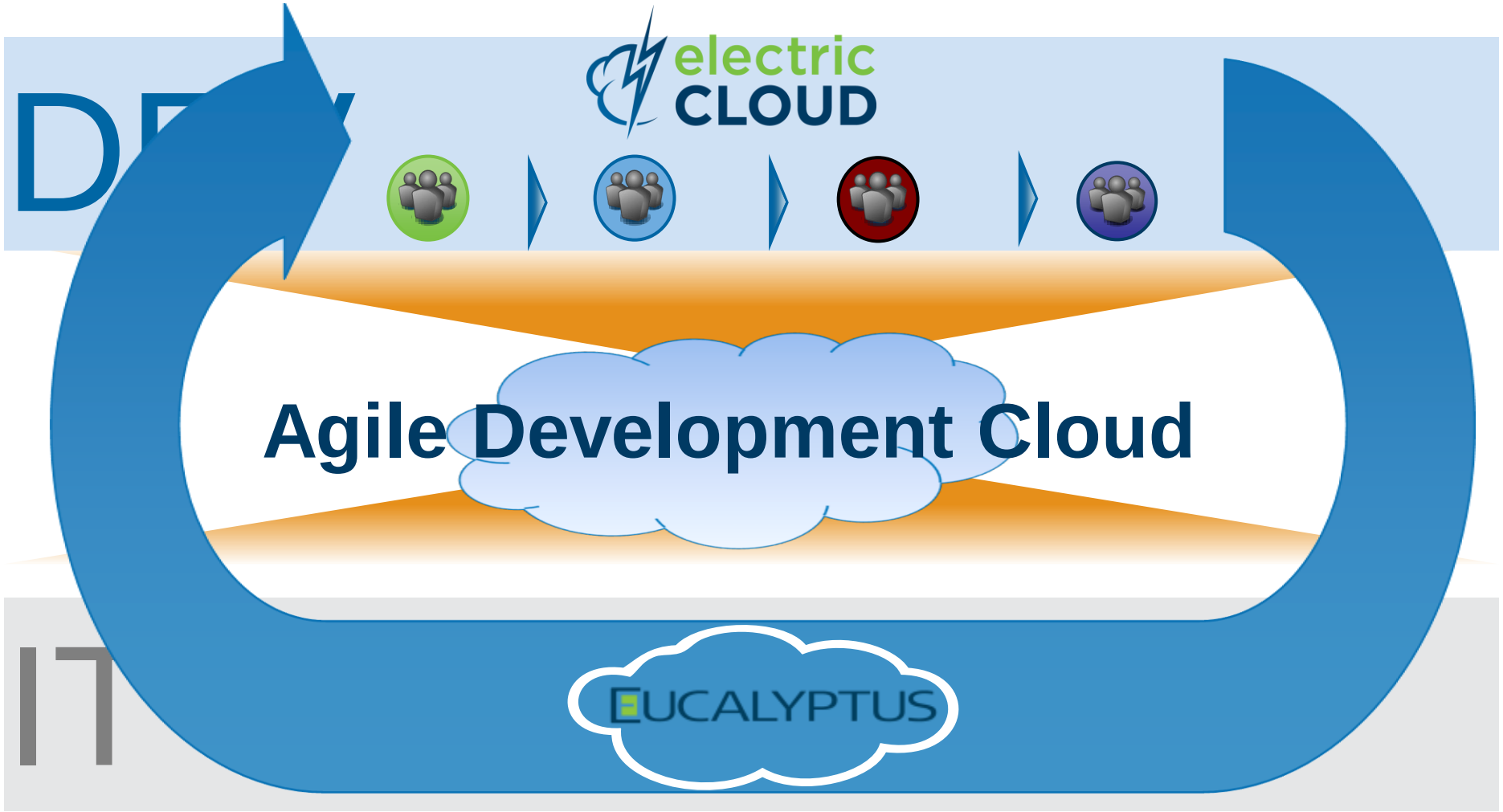
Eucalyptus High Availability IaaS

- Prevent single point of failure from disrupting Eucalyptus service
- Detection of failure(s) with cloud administrator notification
- Automated Eucalyptus service component failure recovery
- No change required to support applications



Agile Development Cloud

Automates end-to-end process & resources



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Benefits of the Agile Development Cloud

Reduced delays
& faster TTM

Reduced errors
& higher quality

Improved
Collaboration

Reduced
Costs

Improved
utilization

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Putting It Together

- Today's development process is complex
  - Many teams, tools, processes
  - Resources with limitless scale, agility
- Eucalyptus and Electric Cloud offer an Agile Development Cloud
  - Best in class Cloud IaaS solution
  - Automate your dev (B-T-D) process
  - Automate resources with process context
- Proven solution with measurable ROI

Demo

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Active Requirements

HP ALM Requirement ID	Current State	Reports	Last Jobs	Actions
367	QA REVIEW	Workflow	CI-7602-BuildAndTest-466-201109231439 SetupWorkflow-94-201109231437	Approve QA deploy
143	QA REVIEW	Workflow	Deploy-45-201109200946 CI-6916-BuildAndTest-428-201109200944 SetupWorkflow-83-201109200942	Approve
136	DEVELOP	Workflow	SetupWorkflow-77-201109191007	
150	OPS DEPLOY	Workflow	Deploy-37-201109191006 Deploy-36-201109191004 CI-6658-BuildAndTest-407-201109191002 SetupWorkflow-76-201109190959	

Traceability Report: Requirements <=> Artifacts <=> Deployments

Requirement	Artifact	Deployment	Date	User	Workflow
143	MercuryTours:App:1.0.0-6914	QA: 6917	2011-09-20T16:47:02.301Z	dev	Rel10.5-Cycle1-ReqID143-201109200942-138
150	MercuryTours:App:1.0.0-6657	QA: 6659	2011-09-19T17:05:07.782Z	dev	Rel10.5-Cycle1-ReqID150-201109190959-132
		PROD:6661	2011-09-19T17:06:12.736Z	dev	Rel10.5-Cycle1-ReqID150-201109190959-132

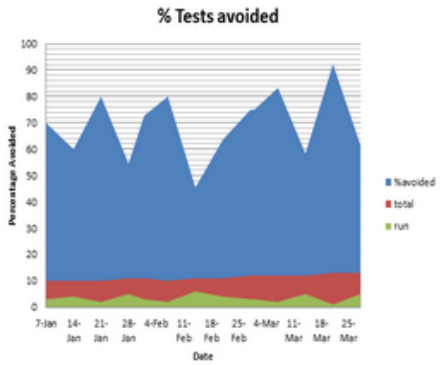
CI Dashboard

Projects: CI Dash 1

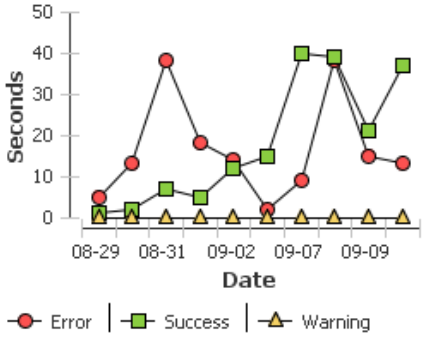
Configuration	Status	Current Build Progress	Recent Runs	Recent Success Ratio	Last Green
Main Branch	✓			100%	
R1 Branch	✓			100%	
R2 Branch	✓			80%	
R3 Branch	✓			100%	
R4 Branch	⚠			60%	

Reports

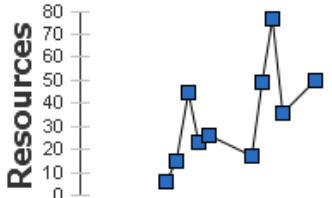
Test Avoidance Trend



Build and test outcome trend



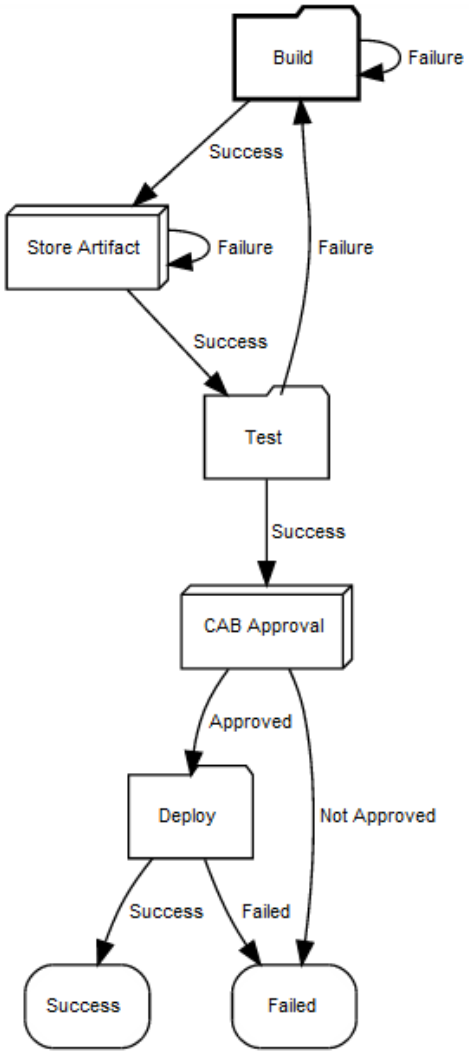
Resource Utilization



Workflow Definition Details – Lifecycle

Run | Edit | Access Control

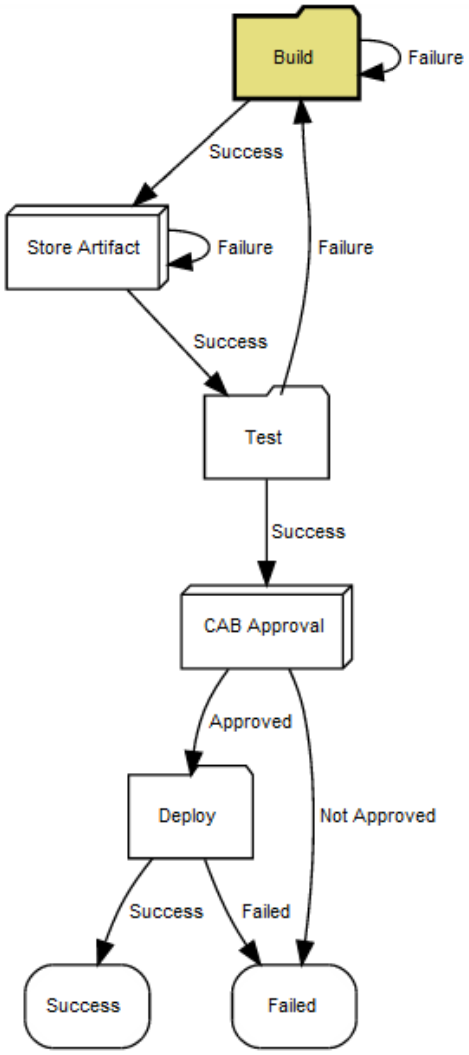
State Definitions | Properties | Graph



Workflow Definition Details – Lifecycle

Run | Edit | Access Control

State Definitions | Properties | Graph

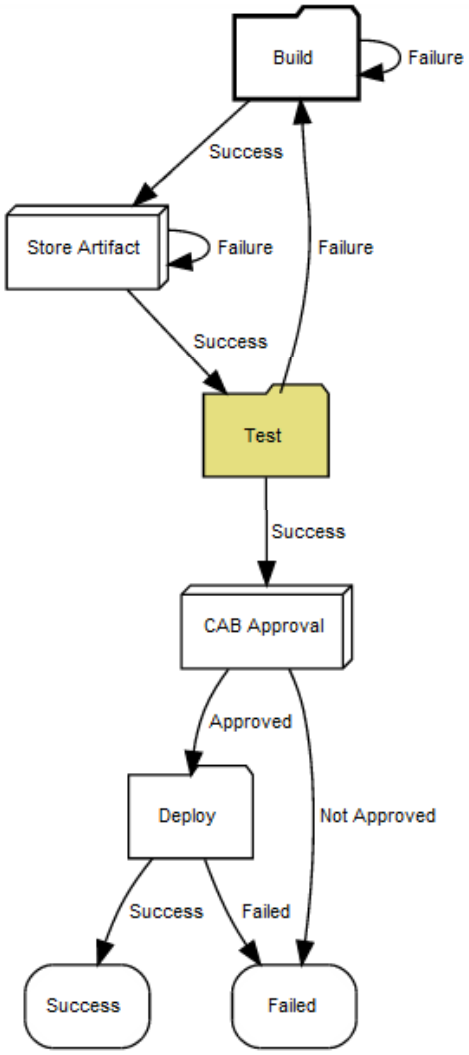


Project: ALM

Workflow Definition Details – Lifecycle

Run | Edit | Access Control

State Definitions | Properties | Graph

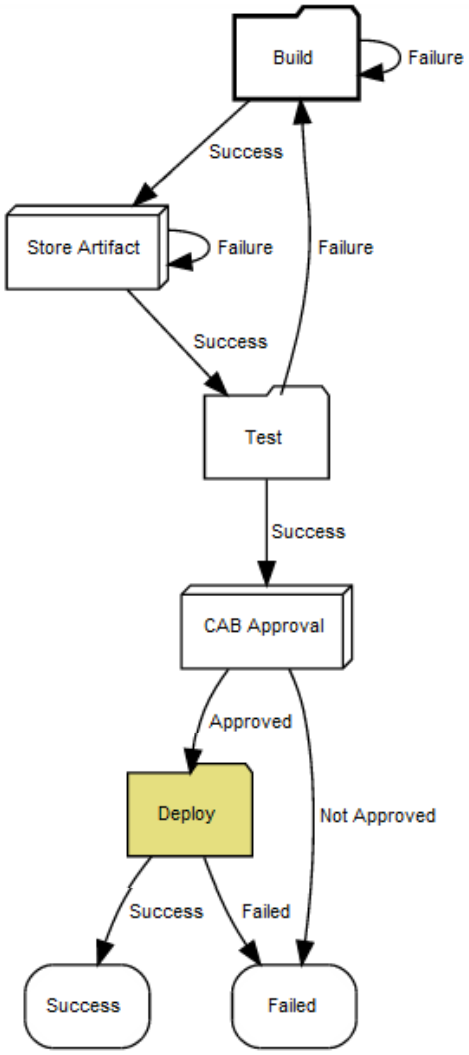


Project: ALM

Workflow Definition Details – Lifecycle

Run | Edit | Access Control

State Definitions | Properties | Graph

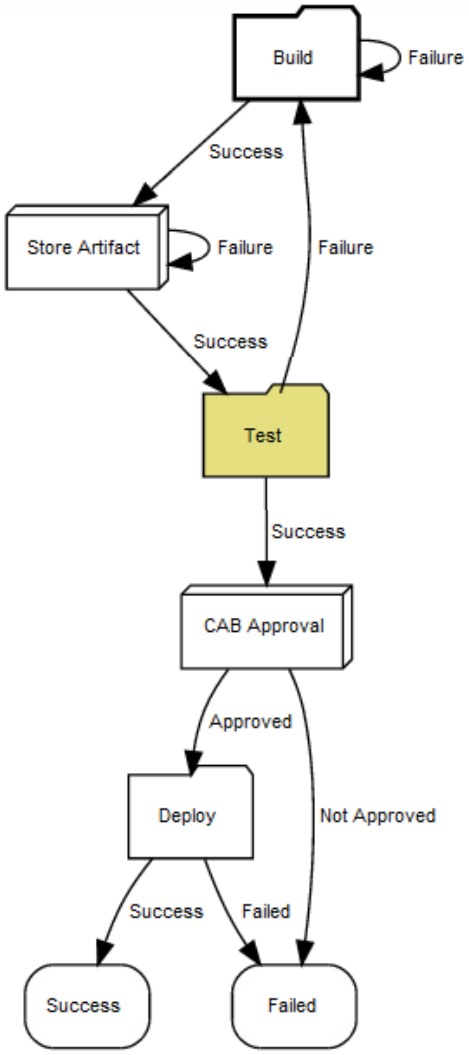


Project: ALM

Workflow Definition Details – Lifecycle

Run | Edit | Access Control

State Definitions | Properties | Graph

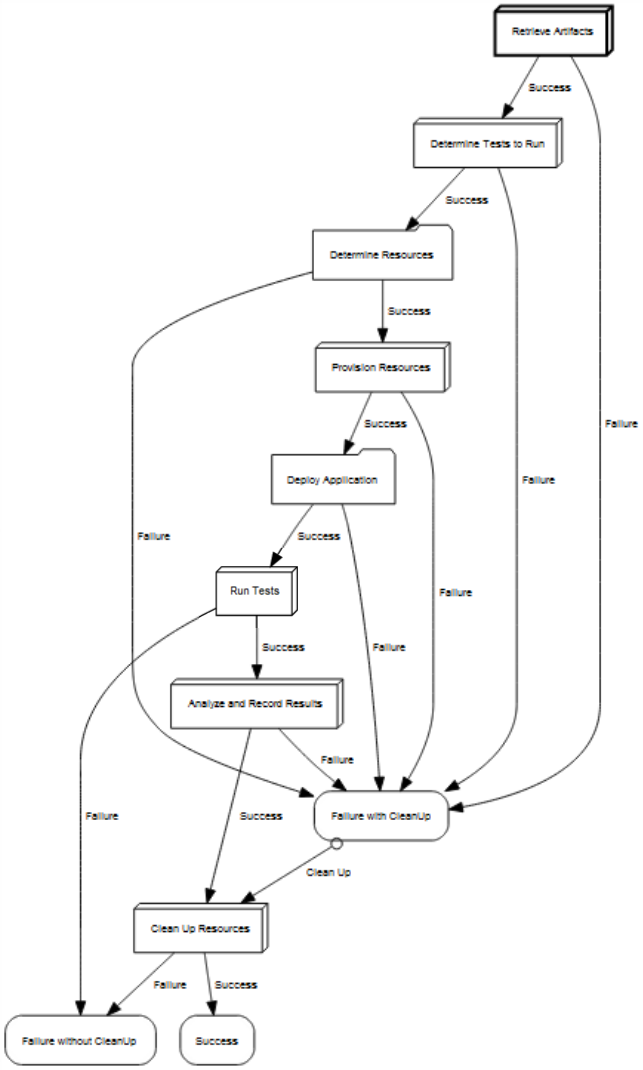


Project: ALM

Workflow Definition Details – Test

Run | Edit | Access Control

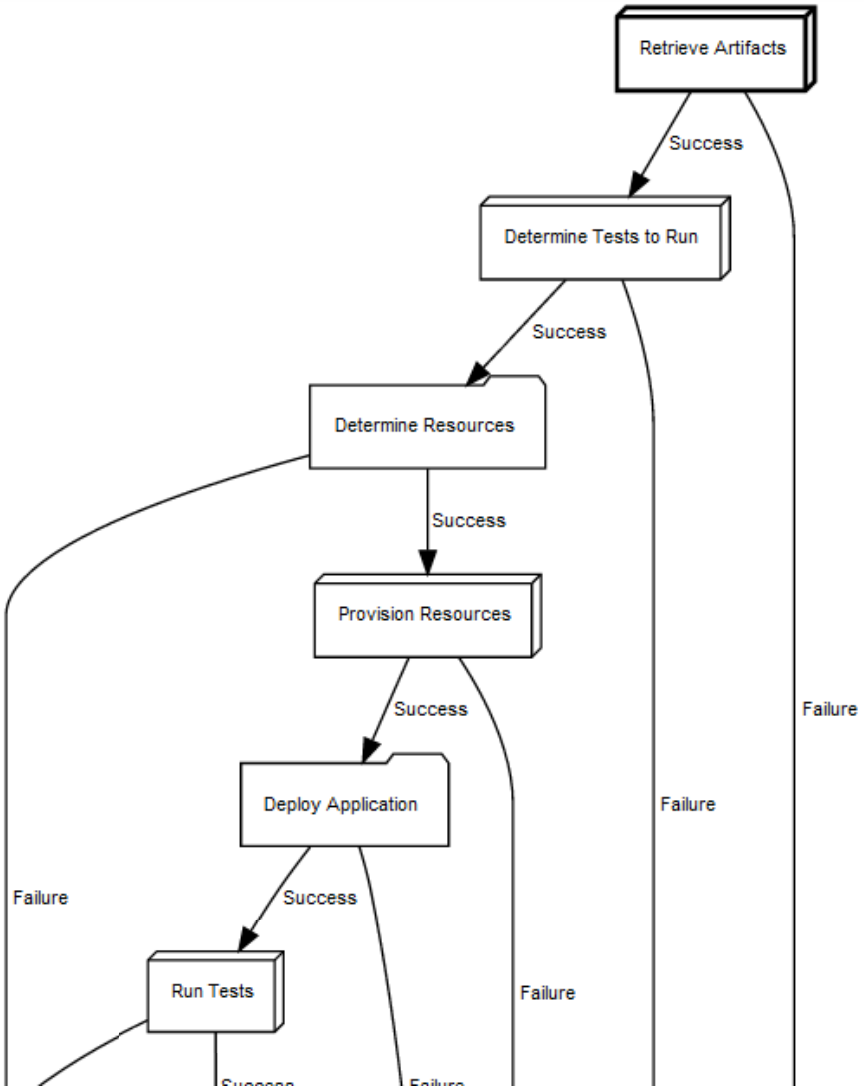
State Definitions | Properties | Graph



Workflow Definition Details – Test

Run | Edit | Access Control

State Definitions | Properties | **Graph**

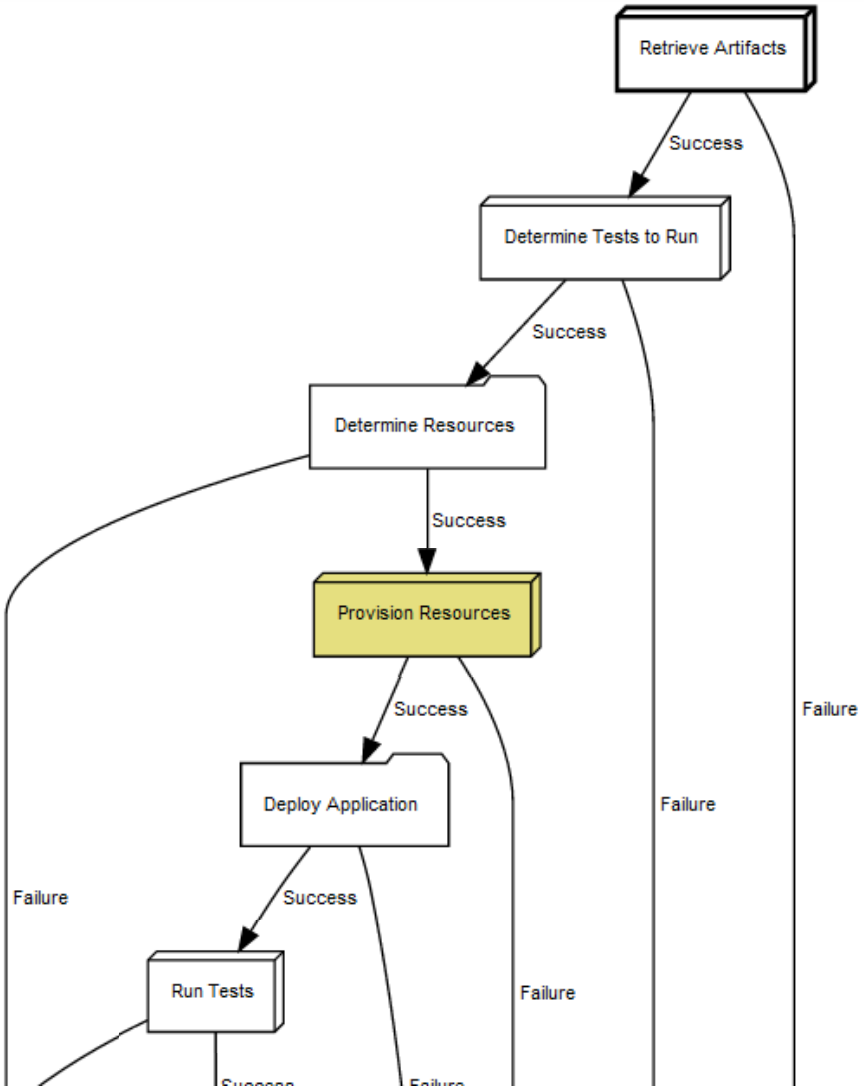


Project: ALM

Workflow Definition Details – Test

Run | Edit | Access Control

State Definitions | Properties | **Graph**



Job Details – Test-477-201109231724

Run Again | Delete | Save Configuration | Access Control | View Log | 29/500

Running with Success

Start Time: 2011-09-26 08:00:03 PDT

Elapsed Time: 02:40:51.523

General Information

Project: ALM

Procedure: Test

Schedule: Test - Continuous Integration

Launched by: admin

Priority: normal

Steps | Diagnostics | Parameters | Properties | Notifiers | Published Artifact Versions | Retrieved Artifact Versions

View: All

Expand All | Collapse All

Step Name	Log	Status	Elapsed Time	Resource	Actions
Provision Test Resources From Public Cloud		Success	00:00:09.891		Edit
Derive Resource Pool		Provision from Private Cloud (Eucalyptus EC2)	00:00:03.422	vm_win7_32b_1	Edit
Provision Resource From Cloud		Provisioning hosts. . .	00:00:02.781	vm_win7_32b_1	Edit
Configure Resource		Configuring resources for testing	00:00:03.328	vm_win7_32b_1	Edit

EUCALYPTUS

Account ID: 339620379587492791068739117450360128220 Contact

User Settings | Images | Instances | Volumes | Snapshots | Key Pairs | Security Groups | Elastic IPs | SDB Items | Storage

Actions: Filters: My Images Select Region Select Availability Show More Filters

Region	Image Id	Image Location	Owner Id	State	Availability
Eucalyptus	emi-0CC81777	scalr2-images-ope-000360186862/euca-base-1-20100922131641.manifest.xml	SebastianS	available	public
Eucalyptus	emi-E9E51553	cumu-jboss6-bucket/cl-jboss6-32bit.img.manifest.xml	spatni	available	public
Eucalyptus	emi-F2C91581	cumu-jboss4-bucket/cl-server-32bit.img.manifest.xml	spatni	available	public
Eucalyptus	emi-F7251183	dak-images/pe-master-lucid.manifest.xml	dkavanagh	available	public
Eucalyptus	emi-0E15161F	NEW_Lightty_ubutu10/NEW_Lightty_ubutu10.manifest.xml	hero317	available	public
Eucalyptus	emi-A9580FF9	jjbucket/rootPart.img.manifest.xml	jj	available	public
Eucalyptus	emi-F13F157D	cumu-jboss4-bucket/cl-master-32bit.img.manifest.xml	spatni	available	public
Eucalyptus	emi-701115DF	rlampt-696423-1288385866/rlampt-696423-1288385866.raw.manifest.xml	golsombe	available	public
Eucalyptus	emi-EBA01757	scalr2-images-ope-000360186862/euca-test-20100908163117.manifest.xml	SebastianS	available	public
Eucalyptus	emi-05E71E34	smoser-ubuntu-images/ubuntu-maverick-10.10-i386-server-20101225.img.manifest.xml	smoser	available	public
Eucalyptus	emi-72D51319	disco/disco.ubuntu.9-04.x86_64.img.manifest.xml	bevyrender	available	public
Eucalyptus	emi-9ACB1363	centos-5.3-x86_64/centos.5-3.x86-64.img.manifest.xml	admin	available	public
Eucalyptus	emi-5C2920C0	hidalgo-ubuntu-image-1981867-1284395516/hidalgo-ubuntu-image-1981867-1284395516.raw.manifest.xml	patrickidalgo	available	public
Eucalyptus	emi-62371FA9	smoser-ubuntu-images/ubuntu-oneiric-alpha1-amd64-server-20110601.img.manifest.xml	smoser	available	public
Eucalyptus	emi-6C4912DA	kokjo-bucket/debian.5-0.x86-64.img.manifest.xml	kokjo	available	public
Eucalyptus	emi-35431F0C	smoser-ubuntu-images/ubuntu-oneiric-alpha2-i386-server-20110706.img.manifest.xml	smoser	available	public
Eucalyptus	emi-51711259	centos-5.6-i386/centos.5.6-i386.img.manifest.xml	admin	available	public
Eucalyptus	emi-040C1573	ttylinux_bucket/ttylinux-i686-11.2.iso.manifest.xml	antoniot	available	public
Eucalyptus	emi-62C90E74	ubuntu1/tmpgtRWuv.manifest.xml	dellis1972	available	public
Eucalyptus	emi-2C2E1273	rusahafn/flat-mono-flat.vmdk.manifest.xml	andre_hafner	available	public

Page: 1 of 5 Go

EUCALYPTUS

Account ID: 339620379587492791068739117450360128220 Contact

User Settings | Images | Instances | Volumes | Snapshots | Key Pairs | Security Groups | Elastic IPs | SDB Items | Storage

Actions: Filters: Select Zone Select State Select Image ID Show More Filters

	Region	Instance Id	Image Id	Type	Zone	State	Public	Launch Time	Running Hours
☐	Eucalyptus	i-322C05D4	emi-8A1119CC	c1.medium	dev/test	pending	euca-0-0-0-0.eucalyptus.eucasys.com	2011-09-23 16:57:58 CDT	0
☐	Eucalyptus	i-4284077E	emi-8A1119CC	c1.medium	dev/test	pending	euca-0-0-0-0.eucalyptus.eucasys.com	2011-09-23 16:57:58 CDT	0

Account ID: 339620379587492791068739117450360128220 Contact

User Settings | Images | Instances | Volumes | Snapshots | Key Pairs | Security Groups | Elastic IPs | SDB Items | Storage

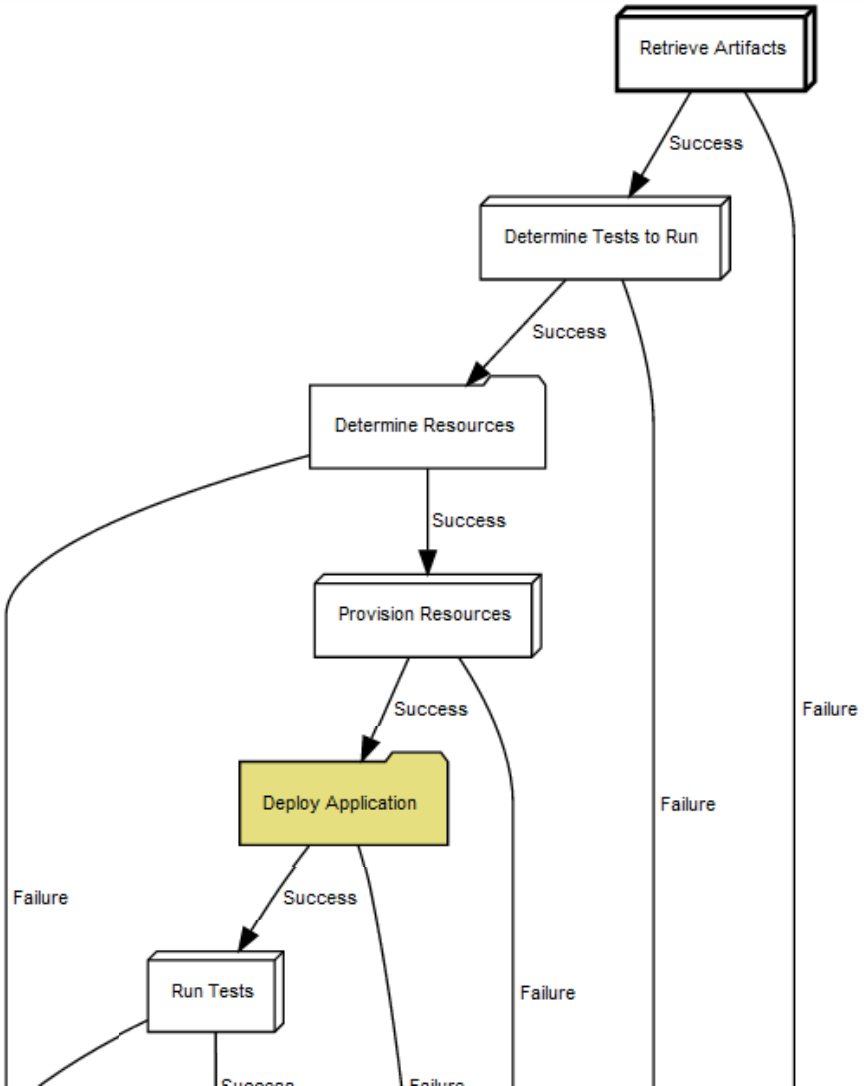
Actions: Filters: Select Zone Select State Select Image ID Show More Filters

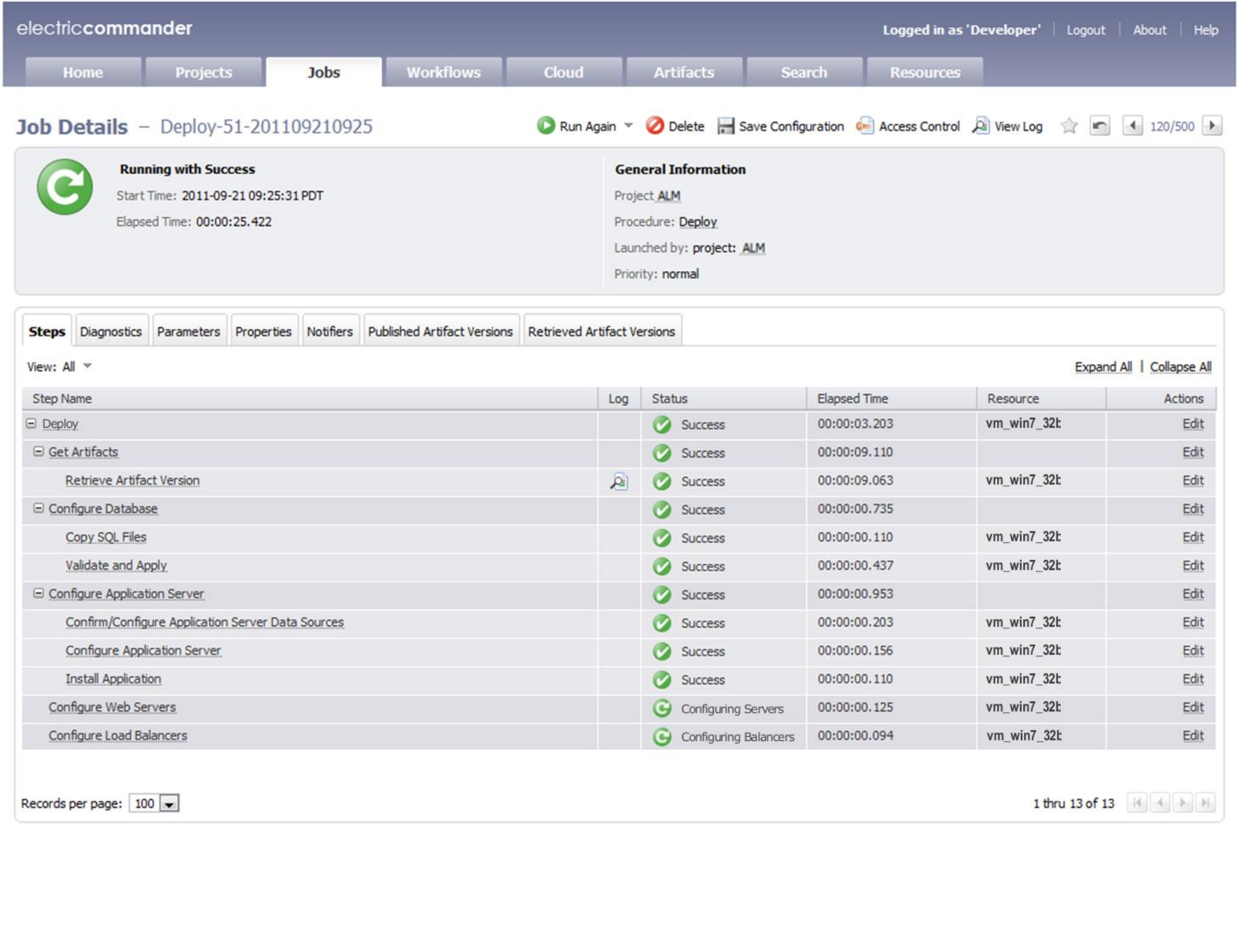
	Region	Instance Id	Image Id	Type	Zone	State	Public	Launch Time	Running Hours
☐	Eucalyptus	i-322C05D4	emi-8A1119CC	c1.medium	dev/test	running	euca-173-205-188-132.eucalyptus.eucasys.com	2011-09-23 16:57:58 CDT	1
☐	Eucalyptus	i-4284077E	emi-8A1119CC	c1.medium	dev/test	running	euca-173-205-188-134.eucalyptus.eucasys.com	2011-09-23 16:57:58 CDT	1

Workflow Definition Details – Test

Run | Edit | Access Control

State Definitions | Properties | **Graph**




electriccommander
Logged in as 'Developer' | Logout | About | Help
Home
Projects
Jobs
Workflows
Cloud
Artifacts
Search
Resources
Job Details – Deploy-51-201109210925
Run Again
Delete
Save Configuration
Access Control
View Log
120/500
Running with Success
Start Time: 2011-09-21 09:25:31 PDT
Elapsed Time: 00:00:25.422
General Information
Project ALM
Procedure: Deploy
Launched by: project: ALM
Priority: normal
Steps
Diagnostics
Parameters
Properties
Notifiers
Published Artifact Versions
Retrieved Artifact Versions
View: All
Expand All | Collapse All
Step Name
Log
Status
Elapsed Time
Resource
Actions
Deploy Success 00:00:03.203 vm_win7_32t Edit
Get Artifacts Success 00:00:09.110 Edit
Retrieve Artifact Version Success 00:00:09.063 vm_win7_32t Edit
Configure Database Success 00:00:00.735 Edit
Copy SQL Files Success 00:00:00.110 vm_win7_32t Edit
Validate and Apply Success 00:00:00.437 vm_win7_32t Edit
Configure Application Server Success 00:00:00.953 Edit
Confirm/Configure Application Server Data Sources Success 00:00:00.203 vm_win7_32t Edit
Configure Application Server Success 00:00:00.156 vm_win7_32t Edit
Install Application Success 00:00:00.110 vm_win7_32t Edit
Configure Web Servers Configuring Servers 00:00:00.125 vm_win7_32t Edit
Configure Load Balancers Configuring Balancers 00:00:00.094 vm_win7_32t Edit
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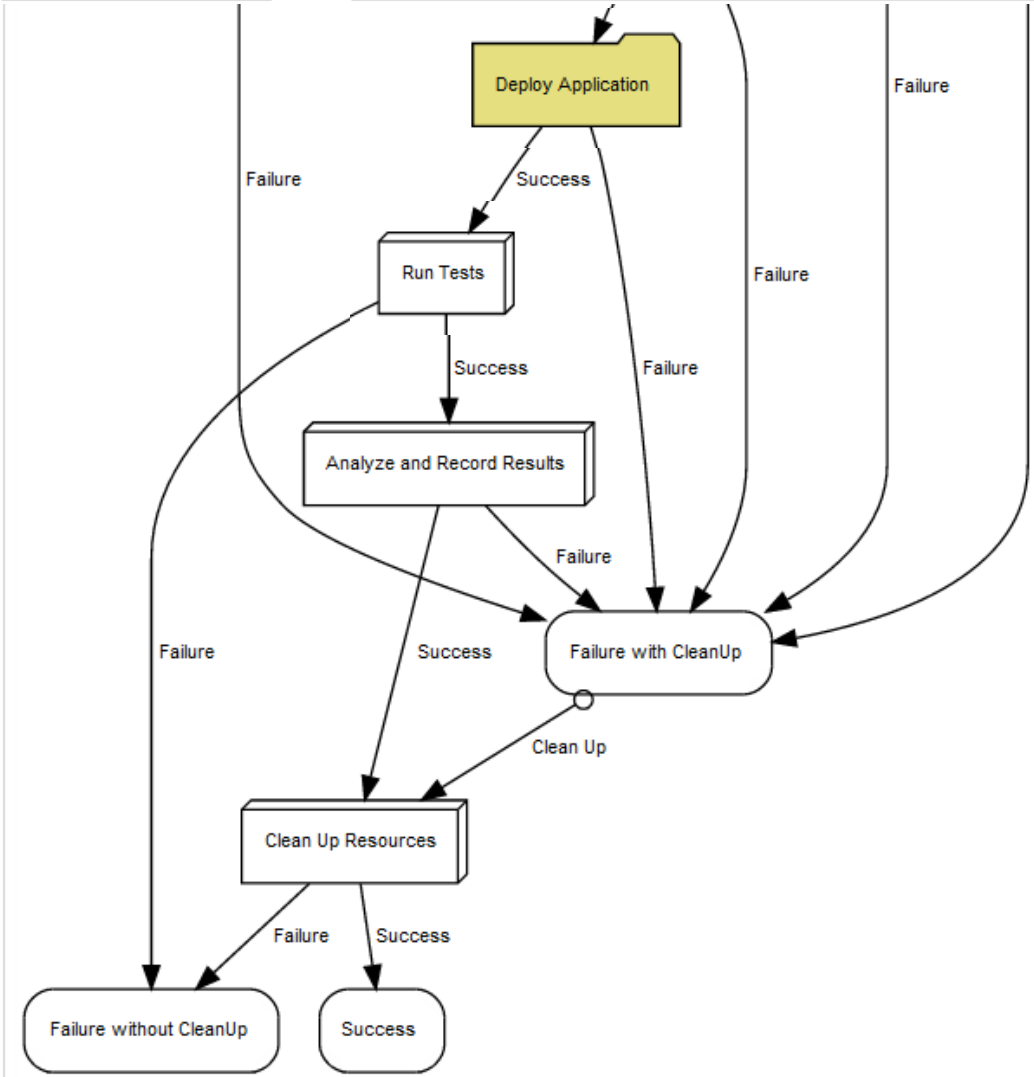
1 thru 13 of 13

Workflow Definition Details – Test

Run | Edit | Access Control

State Definitions | Properties | Graph

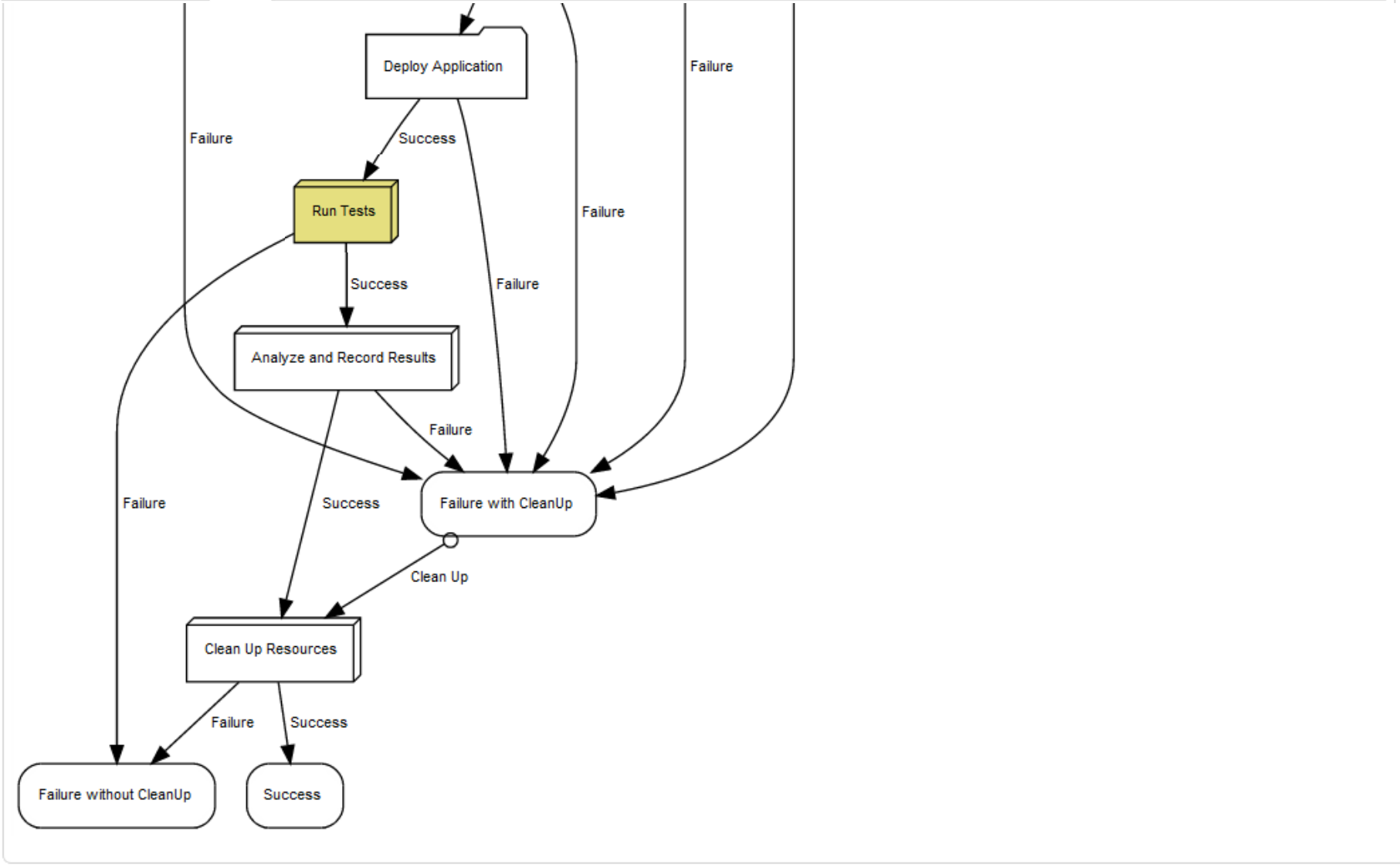


Project: ALM

Workflow Definition Details – Test

Run | Edit | Access Control

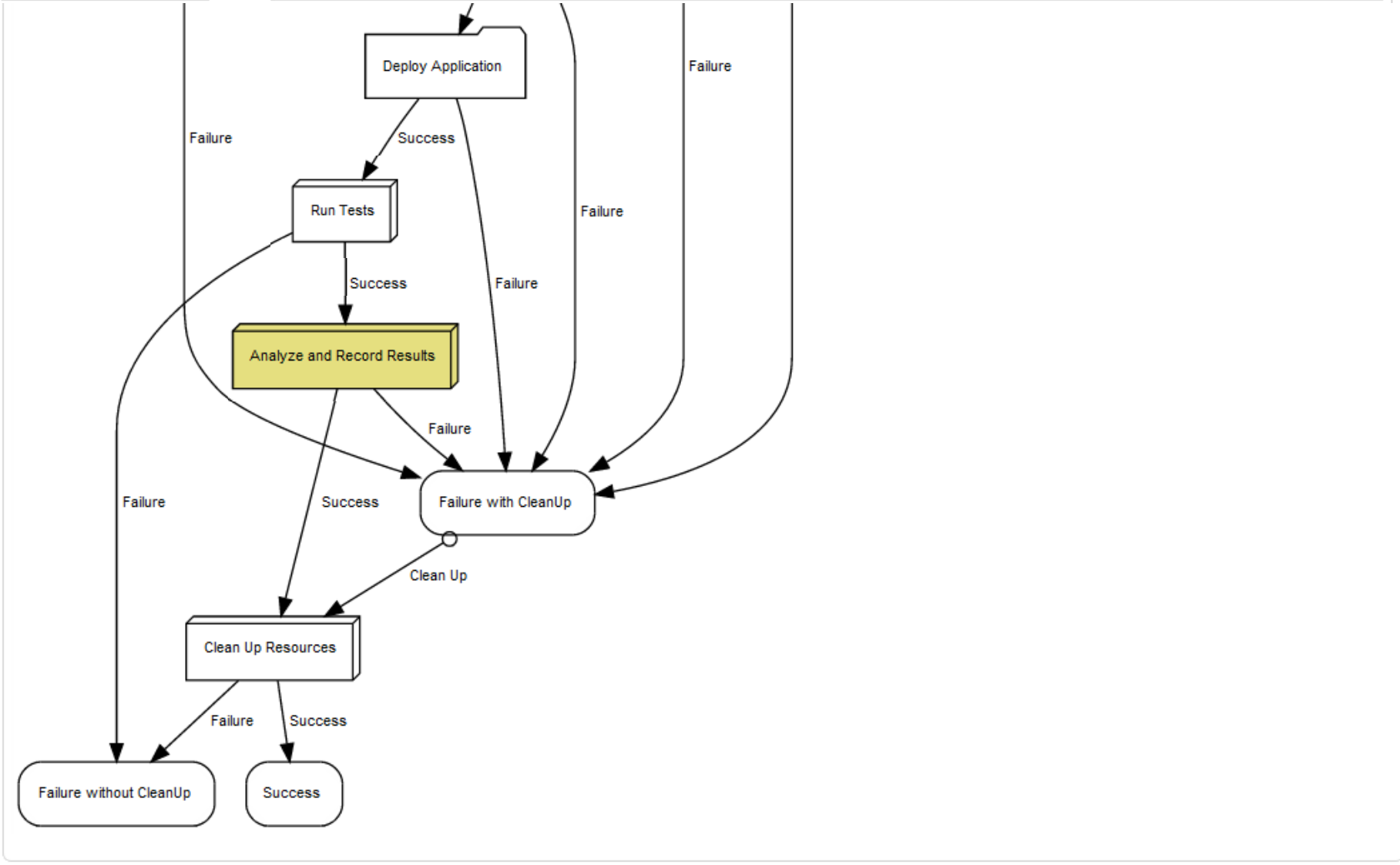
State Definitions | Properties | Graph



Workflow Definition Details – Test

Run | Edit | Access Control

State Definitions | Properties | Graph

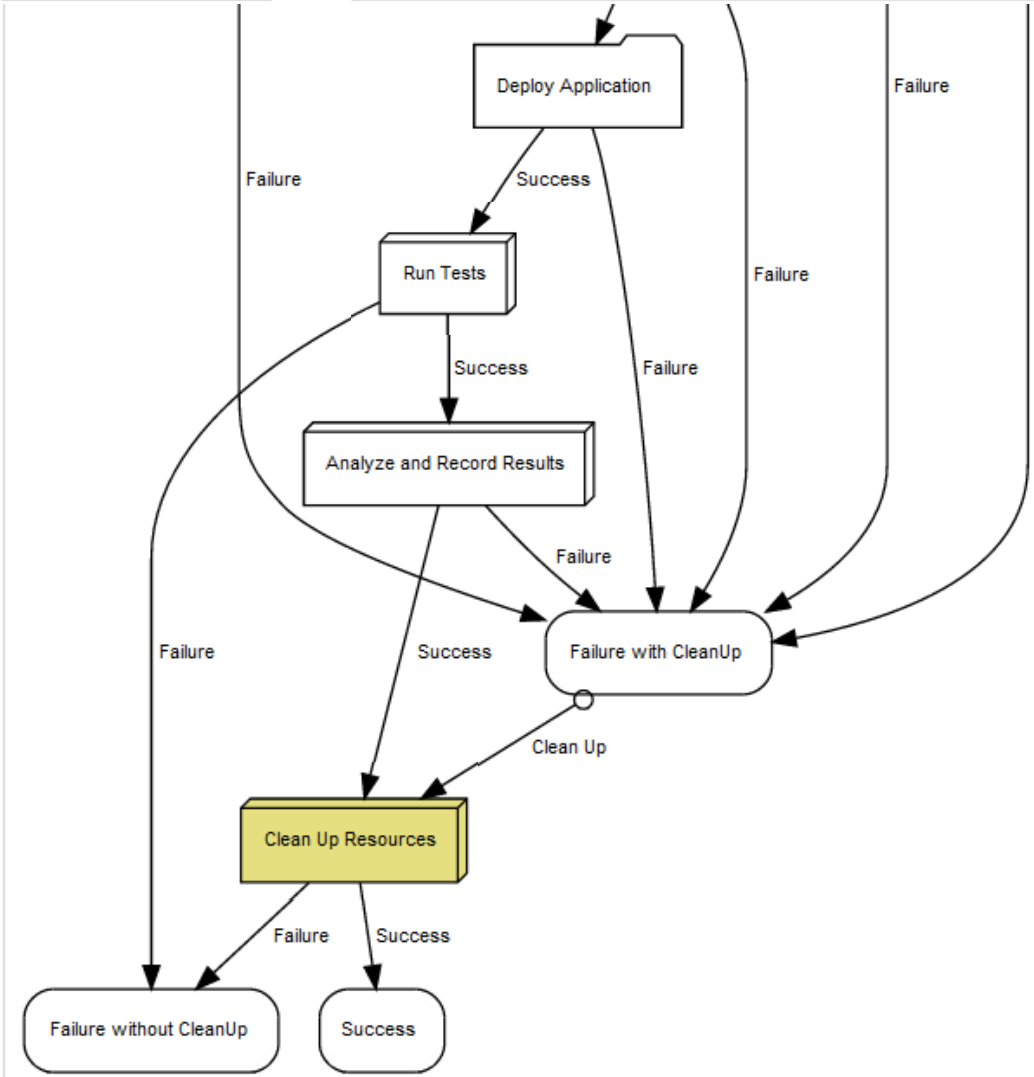


Project: ALM

Workflow Definition Details – Test

Run | Edit | Access Control

State Definitions | Properties | Graph



Account ID: 339620379587492791068739117450360128220 Contact

User Settings | Images | Instances | Volumes | Snapshots | Key Pairs | Security Groups | Elastic IPs | SDB Items | Storage

Actions: Filters: Select Zone Select State Select Image ID Show More Filters

	Region	Instance Id	Image Id	Type	Zone	State	Public	Launch Time	Running Hours
☐	Eucalyptus	i-42F60893	emi-8A1119CC	m1.xlarge	dev/test	shutting-down	euca-173-205-188-132.eucalyptus.eucasys.com	2011-09-23 17:04:09 CDT	1
☐	Eucalyptus	i-5D5809A9	emi-8A1119CC	c1.medium	dev/test	shutting-down	euca-173-205-188-134.eucalyptus.eucasys.com	2011-09-23 17:05:16 CDT	1

EUCALYPTUS

Account ID: 339620379587492791068739117450360128220 Contact

User Settings | Images | Instances | Volumes | Snapshots | Key Pairs | Security Groups | Elastic IPs | SDB Items | Storage

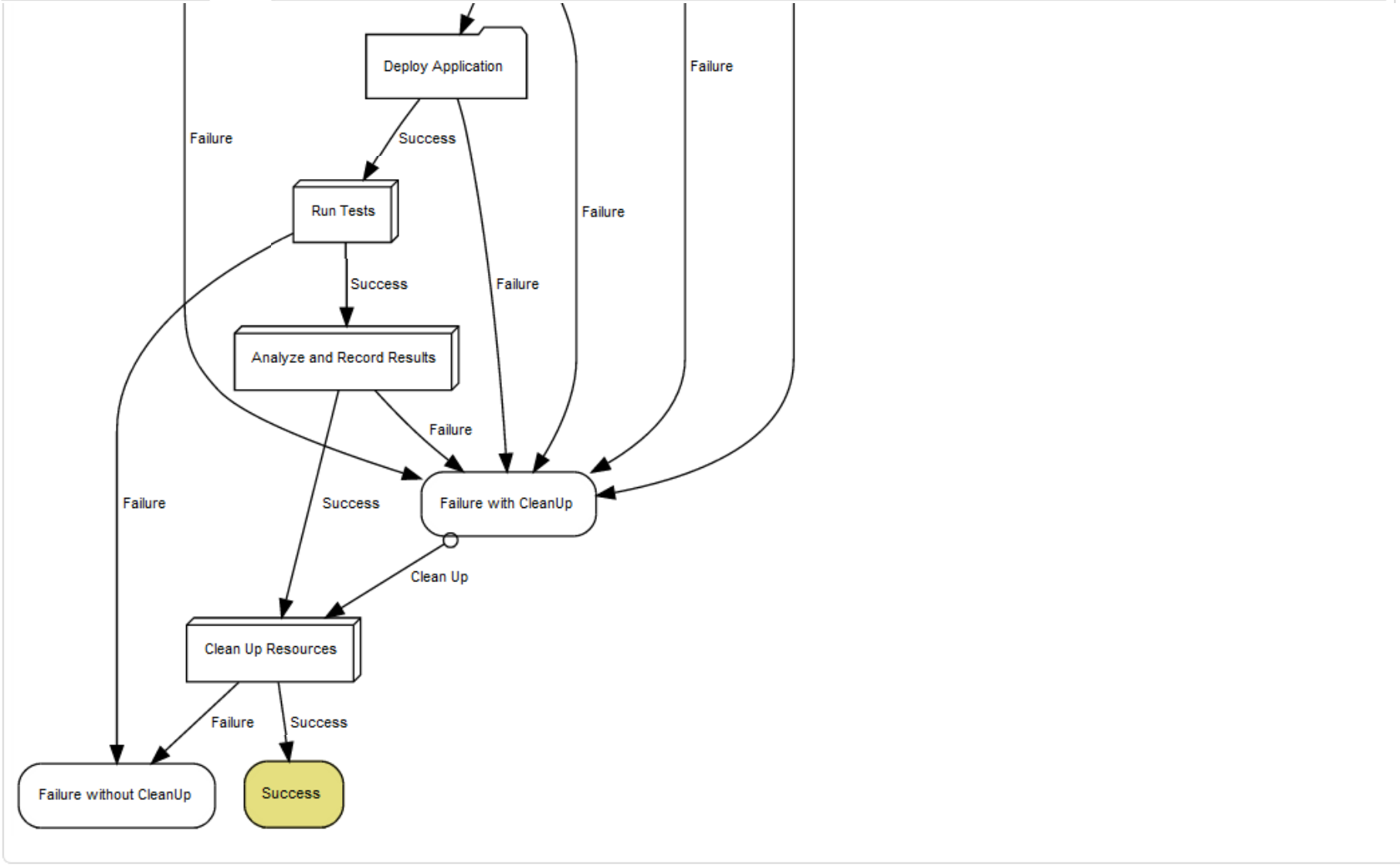
Actions: Filters: Select Zone Select State Select Image ID Show More Filters

	Region	Instance Id	Image Id	Type	Zone	State	Public	Launch Time	Running Hours

Workflow Definition Details – Test

Run | Edit | Access Control

State Definitions | Properties | Graph

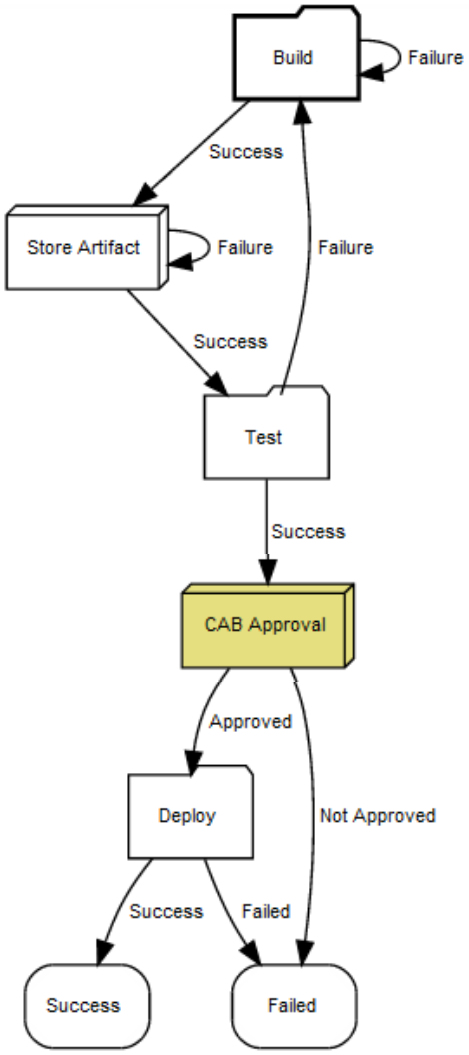


Project: ALM

Workflow Definition Details – Lifecycle

Run | Edit | Access Control

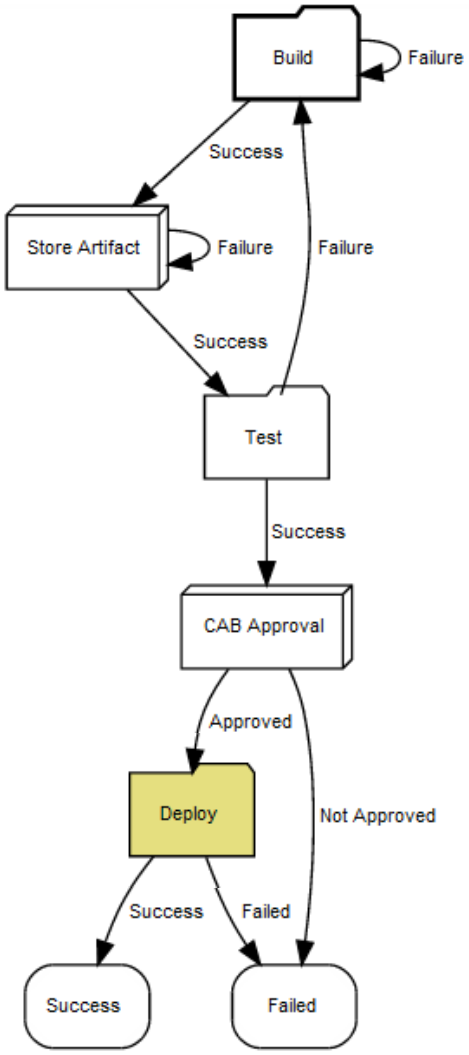
State Definitions | Properties | Graph



Workflow Definition Details – Lifecycle

Run | Edit | Access Control

State Definitions | Properties | Graph



EUCALYPTUS

Account ID: 339620379587492791068739117450360128220 Contact

User Settings | Images | Instances | Volumes | Snapshots | Key Pairs | Security Groups | Elastic IPs | SDB Items | Storage

Actions: Filters: Select Zone Select State Select Image ID Show More Filters

	Region	Instance Id	Image Id	Type	Zone	State	Public	Launch Time	Running Hours
☐	Eucalyptus	i-3DB707BF	emi-8A1119CC	m1.small	prod	running	euca-173-205-188-132.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1
☐	Eucalyptus	i-3E020690	emi-8A1119CC	m1.small	prod	pending	euca-173-205-188-137.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1
☐	Eucalyptus	i-41D20779	emi-8A1119CC	m1.small	prod	pending	euca-173-205-188-135.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1
☐	Eucalyptus	i-4E1A08B2	emi-8A1119CC	m1.small	prod	pending	euca-173-205-188-138.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1
☐	Eucalyptus	i-4E3608C3	emi-8A1119CC	m1.small	prod	running	euca-173-205-188-134.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1

EUCALYPTUS

Account ID: 339620379587492791068739117450360128220 Contact

User Settings | Images | Instances | Volumes | Snapshots | Key Pairs | Security Groups | Elastic IPs | SDB Items | Storage

Actions: Filters: Select Zone Select State Select Image ID Show More Filters

	Region	Instance Id	Image Id	Type	Zone	State	Public	Launch Time	Running Hours
	Eucalyptus	i-3DB707BF	emi-8A1119CC	m1.small	prod	running	euca-173-205-188-132.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1
	Eucalyptus	i-3E020690	emi-8A1119CC	m1.small	prod	running	euca-173-205-188-137.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1
	Eucalyptus	i-41D20779	emi-8A1119CC	m1.small	prod	running	euca-173-205-188-135.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1
	Eucalyptus	i-4E1A08B2	emi-8A1119CC	m1.small	prod	running	euca-173-205-188-138.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1
	Eucalyptus	i-4E3608C3	emi-8A1119CC	m1.small	prod	running	euca-173-205-188-134.eucalyptus.eucasys.com	2011-09-23 17:13:23 CDT	1

Active Requirements

HP ALM Requirement ID	Current State	Reports	Last Jobs	Actions
367	QA REVIEW	Workflow	CI-7602-BuildAndTest-466-201109231439 SetupWorkflow-94-201109231437	Approve QA deploy
143	QA REVIEW	Workflow	Deploy-45-201109200946 CI-6916-BuildAndTest-428-201109200944 SetupWorkflow-83-201109200942	Approve
136	DEVELOP	Workflow	SetupWorkflow-77-201109191007	
150	OPS DEPLOY	Workflow	Deploy-37-201109191006 Deploy-36-201109191004 CI-6658-BuildAndTest-407-201109191002 SetupWorkflow-76-201109190959	

Traceability Report: Requirements <=> Artifacts <=> Deployments

Requirement	Artifact	Deployment	Date	User	Workflow
143	MercuryTours:App:1.0.0-6914	QA: 6917	2011-09-20T16:47:02.301Z	dev	Rel10.5-Cycle1-ReqID143-201109200942-138
150	MercuryTours:App:1.0.0-6657	QA: 6659	2011-09-19T17:05:07.782Z	dev	Rel10.5-Cycle1-ReqID150-201109190959-132
		PROD:6661	2011-09-19T17:06:12.736Z	dev	Rel10.5-Cycle1-ReqID150-201109190959-132

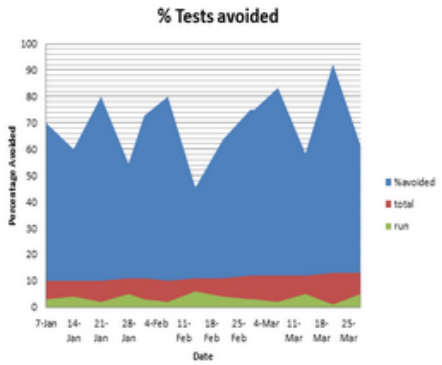
CI Dashboard

Projects: CI Dash 1

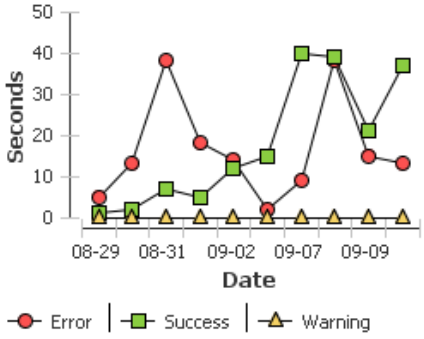
Configuration	Status	Current Build Progress	Recent Runs	Recent Success Ratio	Last Green
Main Branch	✓			100%	
R1 Branch	✓			100%	
R2 Branch	✓			80%	
R3 Branch	✓			100%	
R4 Branch	⚠			60%	

Reports

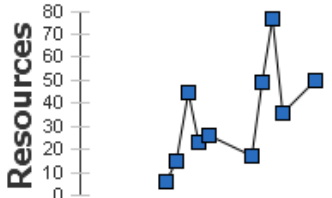
Test Avoidance Trend

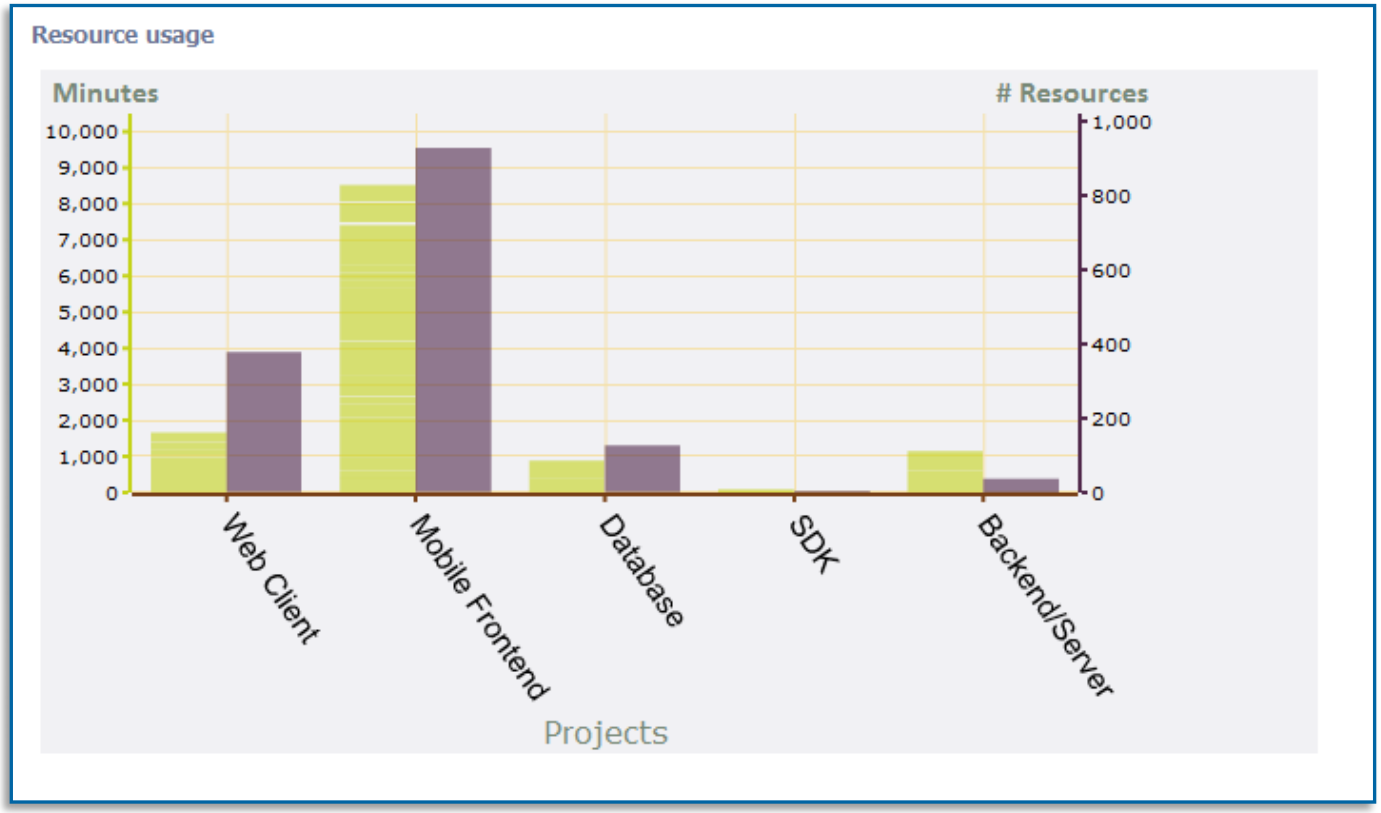


Build and test outcome trend

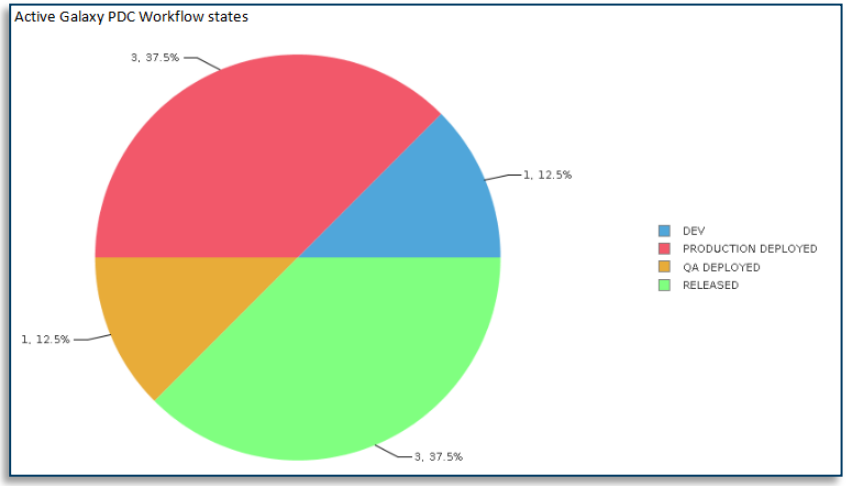


Resource Utilization




Resource usage
Minutes
Resources
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
1,000
800
600
400
200
0
Web Client
Mobile Frontend
Database
SDK
Backend/Server
Projects

Deployments by environment
Number of deployments
5
4
3
2
1
0
09:00
11:00
13:00
Date
DEV DEPLOY
QA DEPLOY
PRODUCTION DEPLOY


Active Galaxy PDC Workflow states
3, 37.5%
1, 12.5%
1, 12.5%
3, 37.5%
DEV
PRODUCTION DEPLOYED
QA DEPLOYED
RELEASED

Summary

Electric Cloud enables Agile Development by:

1. Modeling/Mapping your Software Development Process
2. Enabling Automation of your Software Delivery Procedures
3. Reporting and Analyzing Process Execution and Workflow

Eucalyptus enables your Cloud Infrastructure by:

4. Defining Valuable Infrastructure Services
5. Planning and Standardizing the Cloud Platform
6. Planning and Architecting the Deployment

Electric Cloud/Eucalyptus Partnership makes your Agile Development Cloud by:

7. Integrating development process with infrastructure

Next Steps

Agile Development Cloud through Electric Cloud

Contact sales@electric-cloud.com for free consultation

Cloud Infrastructure through Eucalyptus

Contact sales@eucalyptus.com for free consultation