SOASTA

Installing CloudTest / TouchTest

Deployment Options/Considerations and Implementation Checklist

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Architecture and Deployment Options Review

In order to help determine the right deployment for your situation, in addition to the information contained herein, we would recommend a call with SOASTA to review the architecture and discuss the various options.

The architecture diagrams below show two of the more common deployment scenarios for CloudTest, as well as a continuous integration deployment with TouchTest. These options will be discussed in more detail during the meeting to discuss deployment.

CloudTest Behind the Firewall (or in DMZ) with Cloud-based Load
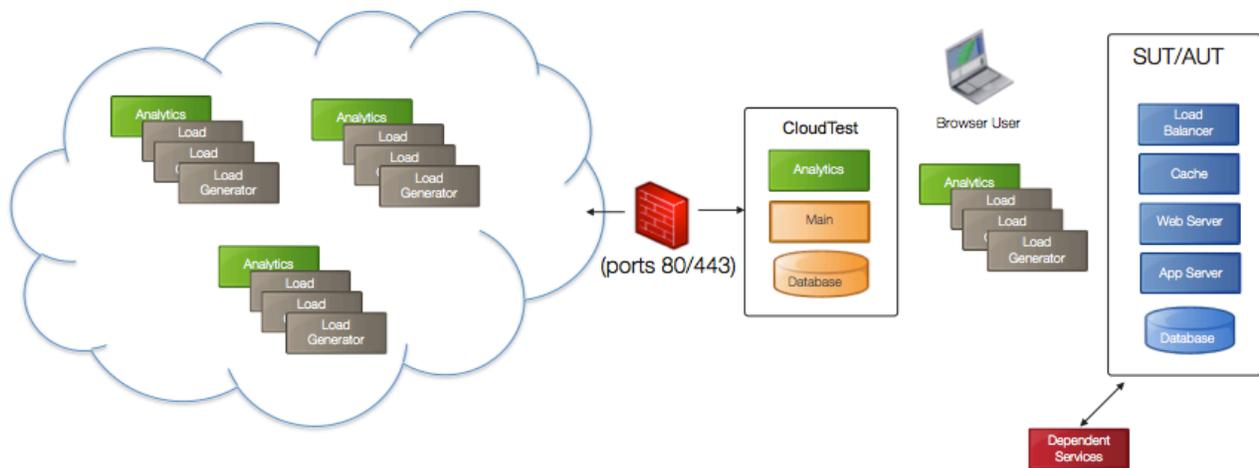
Considerations:
- Provision load generators internally and externally
- Multiple cloud vendors
- Automatic provisioning
- Open ports if running cloud servers from CloudTest

CloudTest in the Cloud
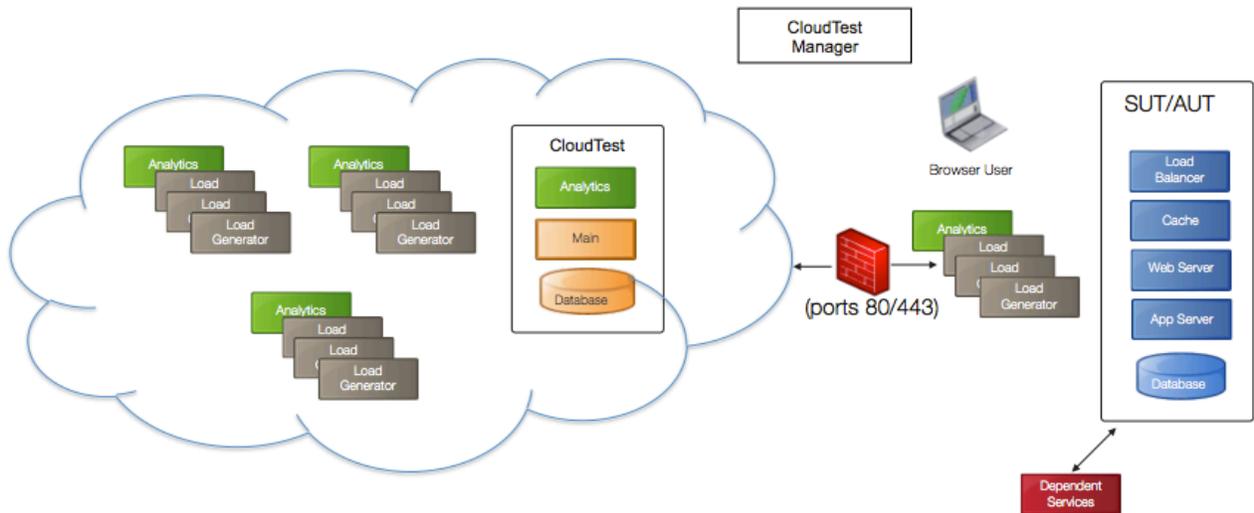
Considerations:
- Pay as you go infrastructure
- Provision load generators internally and externally
- Multiple cloud vendors
- Automatic provisioning
- Open ports if running behind the firewall servers from CloudTest

Continuous Integration Setup

TouchTest server installed in the lab or in the cloud

TouchTest
- Analytics
- Main
- Database

Devices poll TouchTest server over Wifi or carrier network

CI Server

USB Hub

CI Server polls Version Control System for changes

Version Control System
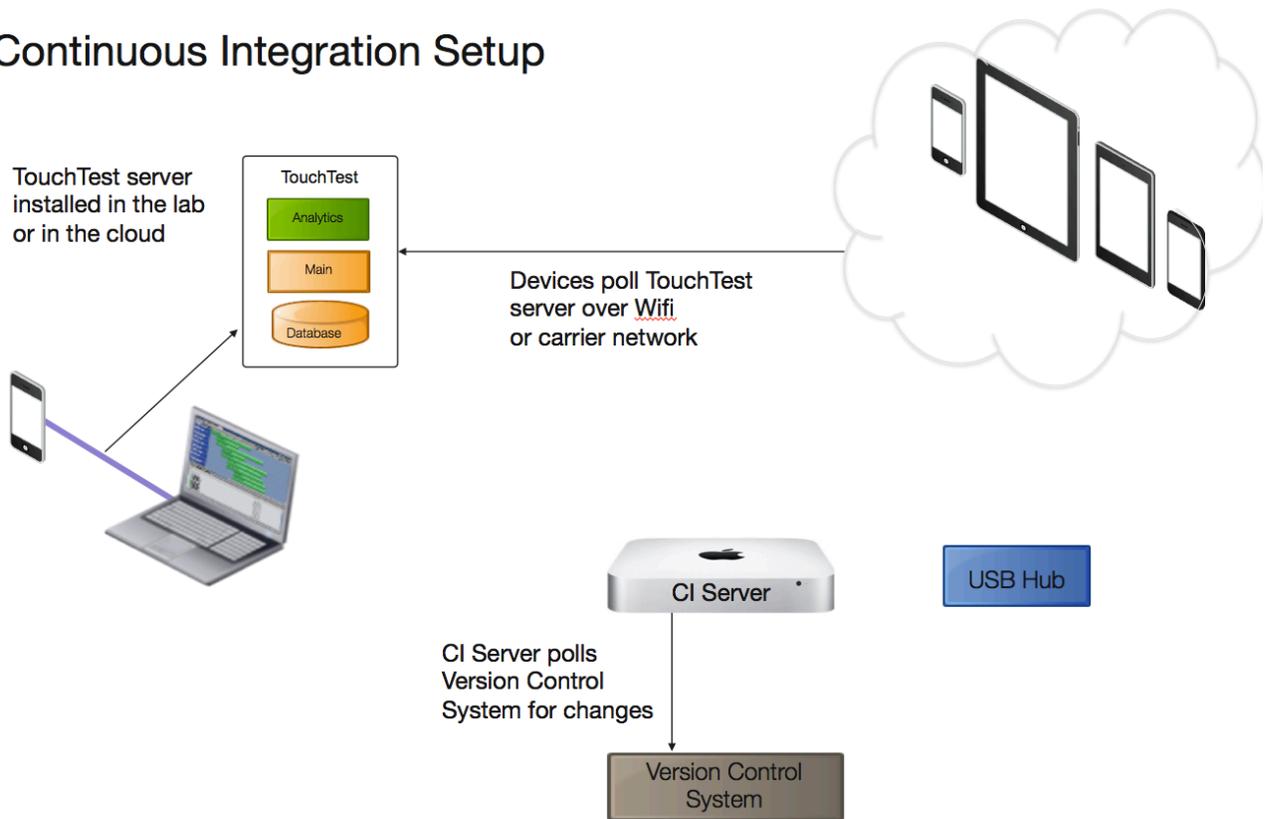
Considerations:
- CI Server needs to be connected to devices to push Apps
- Devices must be able to connect to TouchTest over the Internet
- CI Server and TouchTest can be on the same box
- Multiple CI slaves can be set up for a larger device lab

CloudTest Installation Considerations

Deployment Options

CloudTest is architected to be deployed anywhere: on a single virtual machine or physical server, multiple servers or cloud servers. The distributed architecture maximizes cost savings, scale and flexibility, depending on your needs. Where should you deploy CloudTest? There are a number of questions to consider including:

- Are you using CloudTest for load, functional automation testing, or both?
- Where are the applications under test (inside or outside the corporate firewall)?
- What security issues might come into play?
- Will CloudTest be used continuously or on ad hoc basis?
- For internal deployments, what sort of infrastructure options do you have?
- For load testing, is geographic spread important?

Cloud deployments are popular for their pay-as-you-go cost model and flexibility. You can dynamically size servers to your specific needs, increase disk capacity on-demand and drive load from load generators both behind the firewall and in the cloud. Internal deployments are often favorable when security issues come into play or for systems that are tightly integrated into a 24-hour continuous integration system, such as Jenkins.

SOASTA has identified common configurations for its customers that deploy CloudTest on an internal system. The configurations, included in the appendix below, are relatively conservative and can be tuned based on your specific requirements. For example, the base configuration assumes that CloudTest will be run on a single server driving relatively large load tests at a fairly regular frequency. In fact, CloudTest can be split into two smaller servers, one for the database and the other for the application itself. The size, frequency, and composition of your tests will all have an impact on configuration.

Configuration Criteria

Disk space: how much you need is primarily dependent on the frequency and size of tests, as well as how long you want to keep results. Load test results take up the most space. Other factors include nesting of transactions/pages/clips, which will increase disk utilization, and the number of systems, metrics and sampling rate for monitors.

We recommend a minimum of 1TB (NOT TO EXCEED a maximum of 2 TB), which should be enough space for about a year's worth of weekly test results into the low thousands of virtual users. One benefit of the cloud is that you can start off with a relatively small disk size and easily resize it to be larger, as needed. If you are not deploying to the cloud we recommend hot swappable, mirrored drives for backup and recovery, though if you have another means of backing up your system that's less important.

Memory and CPU: this is the hardest area in which to be precise. Again, a benefit of the cloud is that you can easily try different configurations, and even use different configurations for different tasks. For example, SOASTA PEs typically launch smaller, less expensive instances for scripting, smoke tests, analysis and reporting and multiple larger instances when running tests by putting the main and database components in the illustrations above on separate servers.

If you are going to be running relatively small tests you need less memory and less CPU. The same is true for load generators, though they will also be impacted by the complexity of the test. If there is lots of JavaScript and low think times, for example, you may need more horsepower. In all cases, CloudTest monitors the servers so you can calibrate VUs per server and make sure that they are handling the load generation properly. For CloudLink Premier users, more information on what impacts VUs per server can be found in the CloudTest Methodology and Assets section.

Network Considerations: For installing onsite, the base image ships using DHCP. If you are installing it in a network segment that doesn't have a DHCP server, you can configure the instance with a static address using CT Admin, which requires:

1. IP Address
2. Network Mask
3. Gateway router
4. DNS Server(s)
5. Host Name (defaults to localhost)

The CloudTest system will need to access cloudtestmanager.soasta.com over port 443 for license checking.

For updating your CloudTest system, the network will need to allow it access to cdn.soasta.com over port 80.

There are a number of training videos and documentation available to you from the Welcome page. To access these, your network must allow access to api.brightcove.com and cloudlink.soasta.com over port 80.

Installation Image: For internal deployments you can install an ISO on a physical server or an ISO in a VM. This tends to be the most straightforward and common option.

If using an internal instance of CloudTest system to drive cloud-based servers, the firewall must be configured so the cloud servers can communicate with the internal instance via port 80 and/or 443 (contact SOASTA for more information). Typically this means putting the instance in the DMZ where you can open up the ports for

communication to and from the load generators, as well as communication to the internal load generators and system(s) under test, as appropriate.

In the unlikely case you need a VM image we need to know:

1. What hardware compatibility version are you running, if VMWare
    1. VMware Fusion 4 and ESX 5 or higher (Hardware Version 8), or
    2. VMware Fusion 2 and 3 and ESX 4 or higher (Hardware Version 7)
2. Delivery image, choose from:
    1. VMDK
    2. OVA/OVF

TouchTest Installation Considerations

Deployment Options

TouchTest is also architected to be deployed anywhere: on a single virtual machine or physical server or a cloud server. Where should you deploy TouchTest? As with CloudTest, there are a number of questions to consider, including:

*   Are you also using CloudTest for load and performance?
*   Where are the devices being tested and can they attach to the TouchTest server?
*   What security issues might come into play?
*   Will TouchTest be used continuously or on ad hoc basis?

As noted above, cloud deployments are popular for their pay-as-you-go cost model and flexibility. You can dynamically size servers to your specific needs and increase disk capacity on-demand. Internal deployments are often favorable when security issues come into play or for systems that are tightly integrated into a 24-hour continuous integration system, such as Jenkins or Bamboo.

In order to distribute iOS apps to the devices there must be an Apple Developer Account. How you distribute your apps to devices may impact where you deploy Jenkins, in particular, and possibly TouchTest.

The recommendation for an internal instance of TouchTest is included below. The number of tests being run concurrently will have the greatest impact on configuration.

Configuration Criteria

Disk space: how much you need is primarily dependent on the frequency of tests, how long you want to keep results and whether or not you are capturing/validating a lot of

images. Again, one benefit of the cloud is that you can start off with a relatively small disk size and easily resize it to be larger, as needed.

Memory and CPU: this is the hardest area in which to be precise. The recommendation in the appendix below should be fine unless you are running dozens of different test compositions at the same time. In the cloud, a single XL instance in AWS will be sufficient.

Network Considerations: For installing onsite, the base image ships using DHCP. If you are installing it in a network segment that doesn't have a DHCP server, you can configure the image with a static address using CT Admin, which requires:

1. IP Address
2. Network Mask
3. Gateway router
4. DNS Server(s)
5. Host Name (defaults to localhost)

Additionally, the devices must be able to communicate with the TouchTest server.

The TouchTest system will need to access cloudtestmanager.soasta.com over port 443 for license checking.

For updating your TouchTest system, the network will need to allow it access to cdn.soasta.com over port 80.

There are a number of training videos and documentation available to you from the Welcome page. To access these, your network must allow access to api.brightcove.com and cloudlink.soasta.com over port 80.

Installation Image: For internal deployments you can install an ISO on a physical server or an ISO in a VM. This tends to be the most straightforward and common option.

In the case you need a VM image we need to know:

3. What hardware compatibility version are you running, if VMWare
    1. VMware Fusion 4 and ESX 5 or higher (Hardware Version 8), or
    2. VMware Fusion 2 and 3 and ESX 4 or higher (Hardware Version 7)
4. Delivery image, choose from:
    1. VMDK
    2. OVA/OVF

On-Premise

Main Instance

- SOASTA: hardware spec sample configurations (see Appendix)
- SOASTA: send install instructions, as appropriate for distribution type
- SOASTA: provide download information to image(s)
- SOASTA: create and send license
- Customer: installs CloudTest system (SOASTA is available to answer questions)
- SOASTA/Customer: Setup Webex, as needed, to create tenants and users (user admin and other privileges)
- SOASTA/Customer: Managing CloudTest/TouchTest and Introduction to CloudLink (about 90 minutes)
  - System management
    - User admin
    - What happens when the server has issues?
    - Upgrades
    - User creation
  - Support
    - Customer: creates CloudLink account. CloudLink is the primary source for answering questions related to how to use the product.
    - SOASTA: gives access to CloudLink Premier
    - support@soasta.com: For support if there are product issues that are preventing its use.
    - support@fogbugz.soasta.com: Allows for direct entry into SOASTA's bug tracking system
  - Enablement and Training
    - Self-service: tutorials and documentation
    - Self-service: videos
    - Training

Internal Load Generators

- SOASTA: hardware spec sample configurations (see Appendix)
- SOASTA: Provide download information to image
- SOASTA: Convert one load server image to result server

Cloud Load Generators

- Customer: Create customer cloud provider accounts, if applicable
- SOASTA: Enable Load Plan account(s), if applicable
- Review Best Practices for Grid Management

In the Cloud

Main Instance

- Customer: Establish an AWS account for the main Environment
- SOASTA/Customer: Determine which accounts are to be used for load generation based on agreement, if needed
  - Customer cloud accounts
  - SOASTA Load Plan accounts
- SOASTA/Customer: Discuss options for Elastic IP (EIP) and volume size (EIP is convenient for both launching the environment and setting up monitoring.)
- Customer: Set up default security group to open appropriate ports (see Appendix)
- Customer: Schedule WebEx setup and training session(s)
- SOASTA/Customer: Initial environment setup (one-time activity, about 60 minutes)
- SOASTA/Customer: Managing CloudTest/TouchTest, CloudTest Manager and Introduction to CloudLink (about 60 minutes)
  - CloudTest Manager setup and training
    - User creation
    - Environments / upgrades
    - Best practices
  - CloudTest System management
    - What happens when the server has issues? (CloudLink article)
    - Upgrades (CloudLink article)
    - User creation (CloudLink article)
      - What privileges are required?
  - Support
    - Customer: creates CloudLink account. CloudLink is the primary source for answering questions related to how to use the product.
    - SOASTA: gives access to CloudLink Premier
    - support@soasta.com: For support if there are product issues that are preventing its use.
    - support@fogbugz.soasta.com: Allows for direct entry into SOASTA's bug tracking system
  - Enablement and Training
    - Self-service: tutorials and documentation
    - Self-service: videos
    - Training

Cloud Load Generators

- Customer: Create customer cloud provider accounts, if applicable, in CloudTest
- SOASTA: Enable SOASTA Load Plan account, if applicable
- Review Best Practices for Grid Management

Appendix

Sample Configurations

There are a number of caveats when it comes to configurations. Fewer tests, or deleting old test results, means lower disk requirements, sometimes dramatically so. If only launching smaller grids or if only using a few internal load generators, CPU and/or memory can be lower.

CloudTest Main (tests with load generators):
CPU: hexa-core Processor (64-bit)
Memory: 16GB
Hard drives: 2 x 2TB hot-swappable, mirrored

CloudTest Main (test without load generators):
CPU: 2x quad-core Processors (64-bit)
Memory: 8GB
Hard drives: 2 x 1TB hot-swappable, mirrored

Load Generator
CPU: 1x quad-core Processor (64-bit)
Memory: 8GB
Hard drives: 20GB Disk
Additional RAM and/or CPU cores may increase the number of virtual users depending on the profile of the user scenarios. The above should yield 250-700 VUs under most circumstances. Your scenarios may consume more memory, or more CPU. By calibrating you'll be able to best determine the ratio of memory to CPU, but a good rule of thumb is 2 to 1.

TouchTest Main:
CPU: 1x quad-core Processor (64-bit)
Memory: 8GB
Hard drives: 2 x 1TB hot-swappable, mirrored

Setting up Security in AWS

- Open ports 80 and 443 in the EC2 firewall for each region to be used for load generation. Click here for more information.
- Open port 8443 as well for customers who have the environment under their own AWS account and are using our Load Test Plan AWS account.

SOASTA

AWS Management Console › Amazon EC2   AWS CloudTestPlans ▼ | Help ▼

| AWS Elastic Beanstalk | Amazon S3 | Amazon EC2 | Amazon VPC | Amazon CloudWatch | Amazon Elastic MapReduce | Amazon CloudFront | AWS CloudFormation | Amazon RDS | Amazon ElastiCache | Amazon SQS | AWS IAM | Amazon SNS | Amazon SES | Amazon Route 53 | Amazon DynamoDB | AWS Storage Gateway | Amazon SWF |

Navigation

Region:

🇺🇸 US East (Virginia) ▼

EC2 Dashboard
Events

⊟ INSTANCES
  Instances
  Spot Requests
  Reserved Instances

⊟ IMAGES
  AMIs
  Bundle Tasks

⊟ ELASTIC BLOCK STORE
  Volumes
  Snapshots

⊟ NETWORK & SECURITY
  Security Groups
  Elastic IPs
  Placement Groups
  Load Balancers
  Key Pairs
  Network Interfaces

Security Groups

🔧 Create Security Group   ❌ Delete   🗔 Show/Hide   🔄 Refresh   ❓ Help

Viewing: EC2 Security Groups ▼   [Search] |◁ ◁ 1 to 1 of 1 Items ▷ ▷|

	Name	VPC ID	Description
☑	💧 default		default group

1 Security Group selected

💧 **Security Group:** default

[Details] [**Inbound**]

Create a new rule:	Custom TCP rule ▼
Port range:	[ ]
	(e.g., 80 or 49152-65535)
Source:	0.0.0.0/0
	(e.g., 192.168.2.0/24, sg-47ad482e, or 1234567890/default)

➕ Add Rule

[Apply Rule Changes]

ICMP
Port (Service)	Source	Action
ALL	sg-382aef50 (default)	Delete

TCP
Port (Service)	Source	Action
0 - 65535	sg-382aef50 (default)	Delete
22 (SSH)	0.0.0.0/0	Delete
80 (HTTP)	0.0.0.0/0	Delete
443 (HTTPS)	0.0.0.0/0	Delete
8443 (HTTPS*)	0.0.0.0/0	Delete

UDP
Port (Service)	Source	Action