

# Continuously Delivering a ZFS based OS



STORAGE • OS



# Vadim Comănescu

VP OF ENGINEERING

@vadimcomanescu

syneto

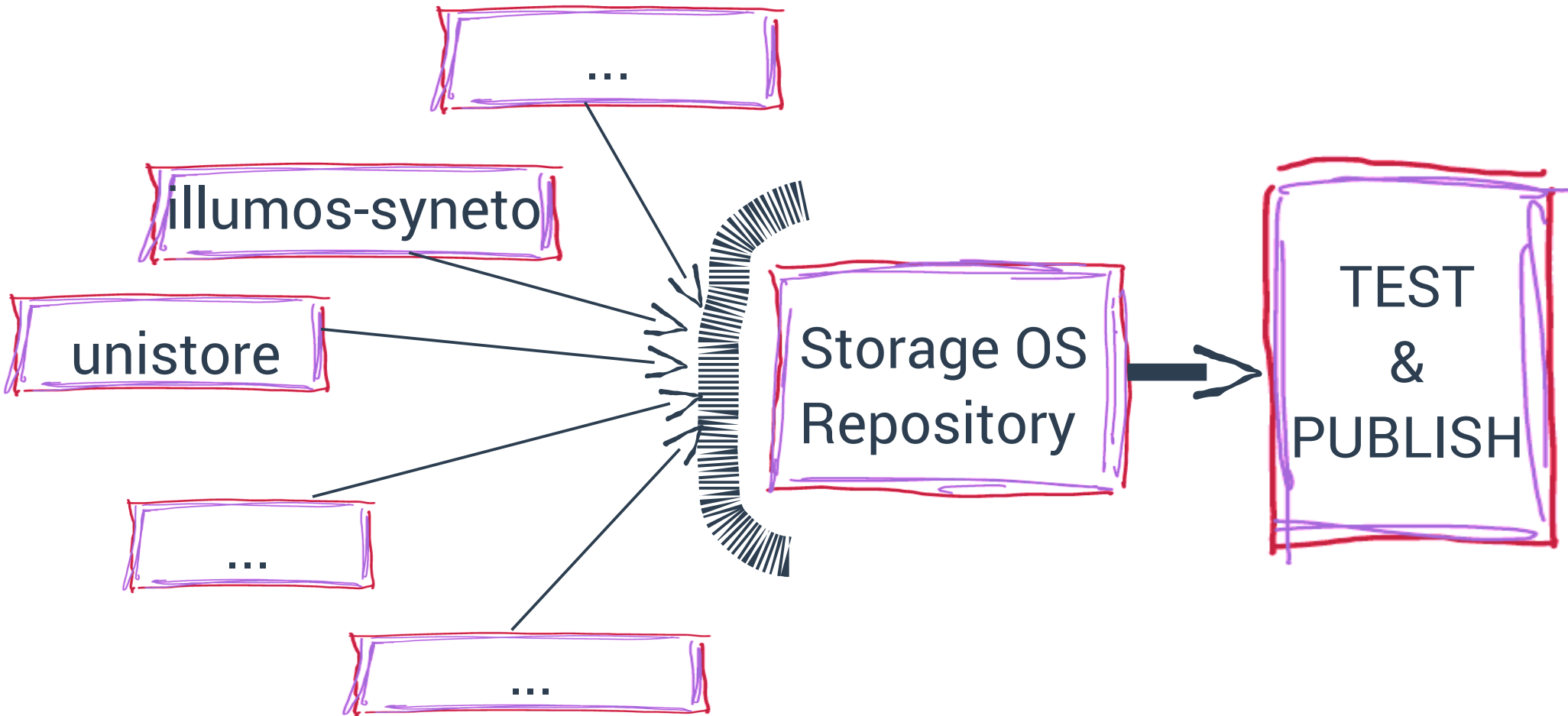
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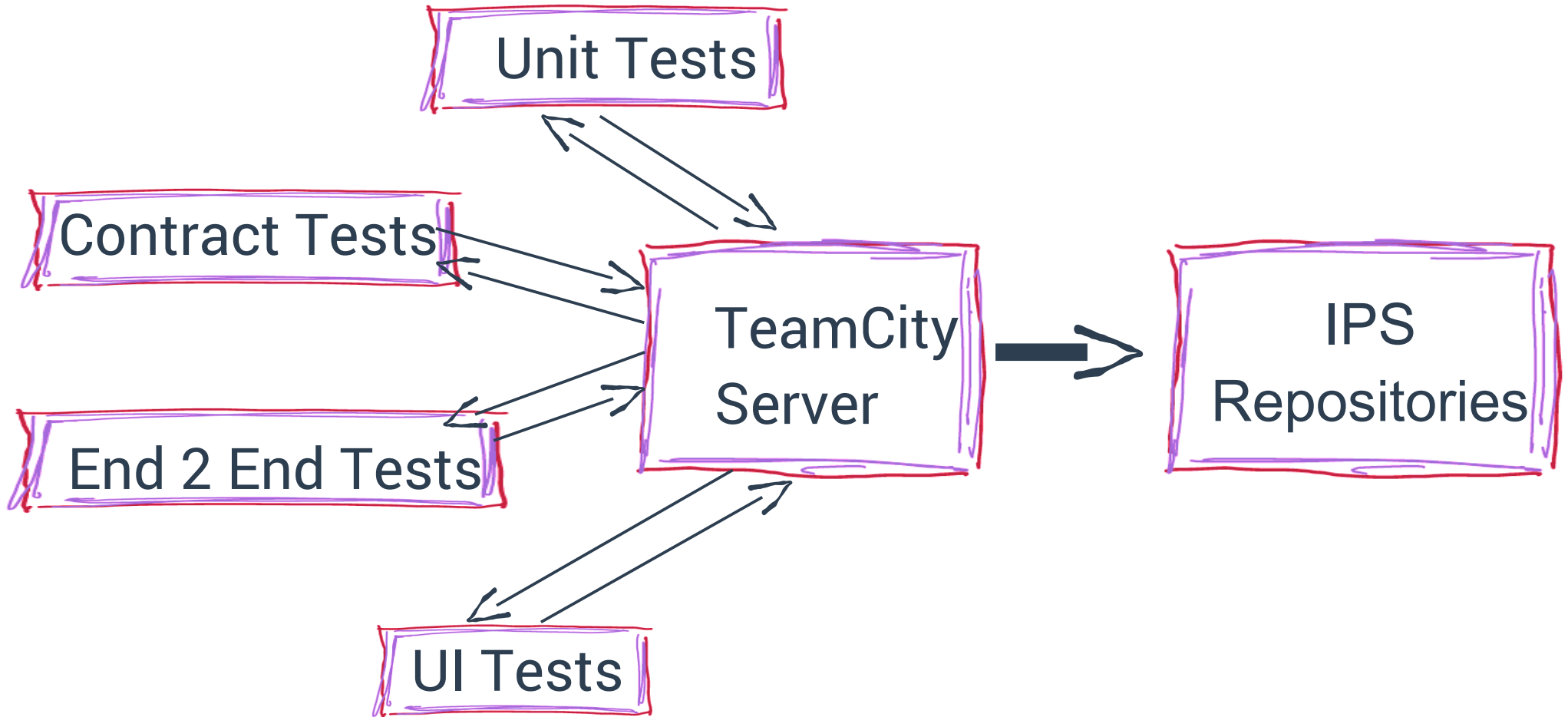
# Dan Vâtca

CTO

@danvatca







TC Projects | My Changes | Agents 3 | Build Queue 0

Csaba Patkos | Administration

Hide Successful Configurations | Configure Visible Projects

Project	Build	Status	Artifacts	Agent	Time
unistore	Syneto closed source	2 failing	1 successful		no hidden
illumos-syneto	Syneto illumos fork				no hidden
Development					
	#83	Success	No artifacts	alex (1)	17 hours ago (1h:27m)
Hotfixes					
	#6	Success	No artifacts	dan.vatca (1)	4 months ago (52m)
Syneto					
	#27	Success	No artifacts	No changes	29 days ago (51m:52s)
oi-build-syneto	OpenIndiana build (oi-build) fork		3 successful		no hidden
slim-source-syneto	OpenIndiana installer (slim-source) fork		3 successful		no hidden
storageos-build	All the build scripts for our projects		1 successful		no hidden
pkg-gate-syneto	OpenIndiana package manager (pkg-gate) fork		3 successful		no hidden
release-builder					
Build IPS and Install Media					
	#232	Success	No artifacts	No changes	7 hours ago (2h:42m)
Checkout release builder sources					
	#23	Success	No artifacts	Dan Vatca (1)	29 days ago (8s)
UI & End-to-End Tests	Runs WebUI and End-to-End tests on the e2e.dev.syneto.net machine		1 successful		no hidden

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Unit Tests

```

[11:33:29] [Step 1/1] ..... 61 / 1331 ( 4%)
[11:33:34] [Step 1/1] ..... 122 / 1331 ( 9%)
[11:33:38] [Step 1/1] ..... 183 / 1331 ( 13%)
[11:33:41] [Step 1/1] ..... 244 / 1331 ( 18%)
[11:33:41] [Step 1/1] ..... 305 / 1331 ( 22%)
[11:33:44] [Step 1/1] ..... 366 / 1331 ( 27%)
[11:33:46] [Step 1/1] ..... 427 / 1331 ( 32%)
[11:33:48] [Step 1/1] ..... 488 / 1331 ( 36%)
[11:33:51] [Step 1/1] ..... 549 / 1331 ( 41%)
[11:33:54] [Step 1/1] ..... 610 / 1331 ( 45%)
[11:33:56] [Step 1/1] ..... 671 / 1331 ( 50%)
[11:33:57] [Step 1/1] ..... 732 / 1331 ( 54%)
[11:33:58] [Step 1/1] ..... 793 / 1331 ( 59%)
[11:34:04] [Step 1/1] ..... 854 / 1331 ( 64%)
[11:34:05] [Step 1/1] ..... 915 / 1331 ( 68%)
[11:34:06] [Step 1/1] ..... 976 / 1331 ( 73%)
[11:34:08] [Step 1/1] ..... 1037 / 1331 ( 77%)
[11:34:09] [Step 1/1] ..... 1098 / 1331 ( 82%)
[11:34:17] [Step 1/1] ..... 1159 / 1331 ( 87%)
[11:35:39] [Step 1/1] ..... 1220 / 1331 ( 91%)
[11:36:07] [Step 1/1] ..... 1281 / 1331 ( 96%)
[11:36:09] [Step 1/1] .....
[11:36:09] [Step 1/1]
[11:36:09] [Step 1/1] Time: 2.75 minutes, Memory: 306.00Mb
[11:36:09] [Step 1/1]
[11:36:09] [Step 1/1] OK (1331 tests, 6108 assertions)

```

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Unit Tests

Contract Tests

```
function testCreateAStripeDiskpoolConfigurationShouldCreateANonRedundancyDiskpool() {...}
function testCreateARaidz1DiskpoolConfigurationWithOneTopLevelVdev() {...}
function testCreateARaidz1DiskpoolConfigurationWithTwoTopLevelVirtualDevices() {...}
function testCreateARaidz2DiskpoolConfigurationWithOneTopLevelVdev() {...}
function testCreateAMirrorDiskpoolConfigurationWithOneVirtualDevice() {...}
function testCreateAMirrorDiskpoolConfigurationWithTwoTopLevelVirtualDevices() {...}
function testCreateAStripeDiskpoolConfigurationWithSpareDisk() {...}
function testCreateAStripeDiskpoolConfigurationWithASpareAndALogDisk() {...}
function testDestroyRemovesADiskpoolThatWasCreated() {...}
function testAddTopLevelVdevAddsALogDiskToAStripeDiskpoolConfiguration() {...}
function testAddTopLevelVdevAddsMultipleLogDisksAutoMirrorConfiguredToADiskpool() {...}
function testAddTopLevelVdevAddARaidz1VdevToARaidz1DiskpoolConfiguration() {...}
function testaddTopLevelDevicesAddsTopLevelDevicesToAStripeDiskpoolConfiguration() {...}
function testremoveNontopLevelDeviceRemovesALogDisk() {...}
function testremoveNontopLevelDeviceRemovesASpareDisk() {...}
function testremoveNonTopLevelDeviceRemovesASpareAndALogDisk() {...}
```

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Unit Tests

Contract Tests

E2E Tests

```

Test: /opt/zfs-tests/tests/functional/cli_root/zfs_upgrade/zfs_upgrade_005_pos (run as root) [01:10] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zfs_upgrade/zfs_upgrade_006_neg (run as root) [00:00] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zfs_upgrade/zfs_upgrade_007_neg (run as root) [00:00] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zfs_upgrade/cleanup (run as root) [00:01] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool/setup (run as root) [00:01] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool/zpool_001_neg (run as root) [00:01] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool/zpool_002_pos (run as root) [00:02] [FAIL]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool/zpool_003_pos (run as root) [00:00] [FAIL]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool/cleanup (run as root) [00:01] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool_add/setup (run as root) [00:46] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool_add/zpool_add_001_pos (run as root) [00:52] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool_add/zpool_add_002_pos (run as root) [00:34] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool_add/zpool_add_003_pos (run as root) [00:33] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool_add/zpool_add_004_pos (run as root) [00:38] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool_add/zpool_add_005_pos (run as root) [01:02] [PASS]
Test: /opt/zfs-tests/tests/functional/cli_root/zpool_add/zpool_add_006_pos (run as root) [06:15] [FAIL]

```

#### TEST SUITE

Full Name

Documentation:

A test suite for various disk and pool scenarios.

Source:

/tank/storage-os/build/unistore/dev/Lego/Test/FunctionalTests/test\_files/diskpool\_test.txt

Start / End / Elapsed:

20140516 12:26:04.624 / 20140516 12:27:17.775 / 00:01:13.151

Status:

1 critical test, 1 passed, 0 failed  
1 test total, 1 passed, 0 failed

#### TEST CASE: Disk Pool Status

Expand All

Full Name:

Test Files.Diskpool Test.Disk Pool Status

Start / End / Elapsed:

20140516 12:26:04.787 / 20140516 12:27:17.774 / 00:01:12.987

Status:

PASS (critical)

+ KEYWORD: resource.GIVEN A POOL WITH 1 DISKS

Expand All

+ KEYWORD: resource.WHEN I ASK THE STATE OF THE DISKS

Expand All

+ KEYWORD: resource.THEN I SHOULD SEE 1 DISKS WITH STATUS IN-POOL

Expand All

+ TEARDOWN: Selenium2Library.Close Browser

Expand All



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Unit Tests

Contract Tests

E2E Tests

UI Tests

- Test
  - FakeLego
    - Branding
    - Core
    - Event
    - Firmware
    - HA
    - Infrastructure
    - Licensing
  - Finder
    - License.php
    - Checker.php
    - ILicense.php
    - License.php
  - Networking
  - OS
  - Storage
  - Devices
    - Disk.php
    - DiskRepository.php
  - Diskpool
    - Repository.php
    - ScanStatus.php
    - Scrubber.php
    - StatusInfo.php
  - ZfsDatasetDeathrow.php

```
[36mWelcome to CakePHP v2.4.1 Console [0m
```

```
-----
App : app
Path: /tank/storage-os/build/unistore/dev/WebInterface/app/
-----
```

```
CakePHP Test Shell
```

```
-----
PHPUnit 3.7.31 by Sebastian Bergmann.
```

```
.....
Time: 686 ms, Memory: 6.00Mb
```

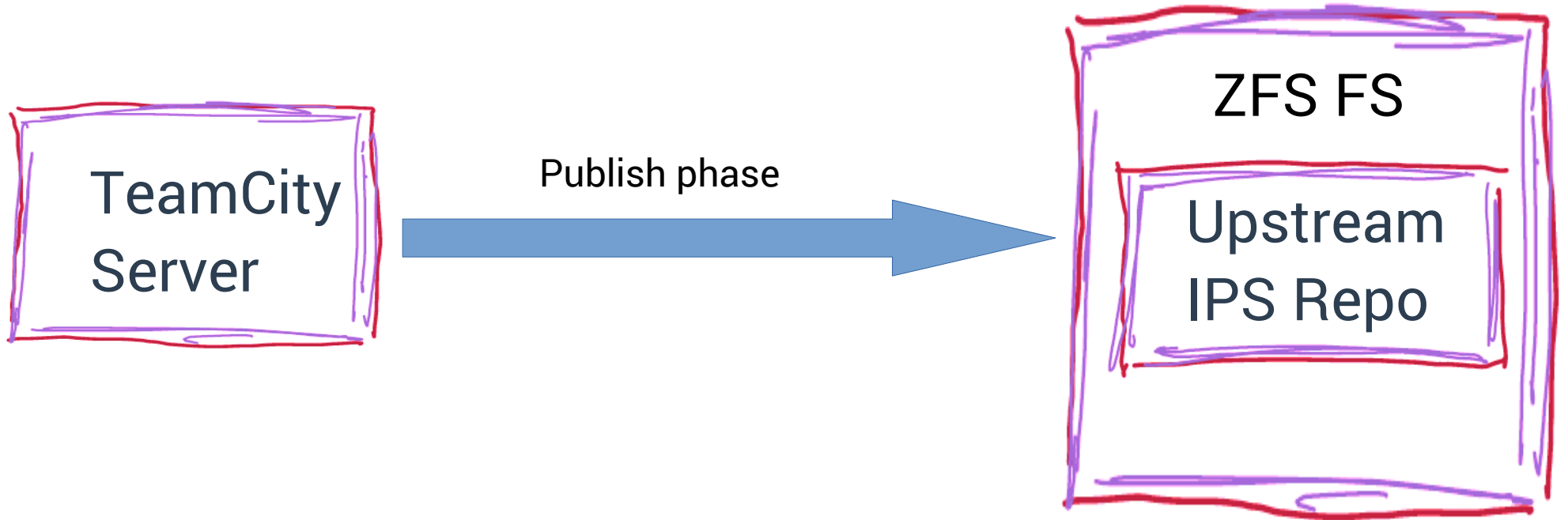
```
[30;42m [2KOK (10 tests, 11 assertions)
```

**Test Statistics**

Total Statistics	Total	Pass	Fail	Elapsed	Pass / Fail
Critical Tests	1	1	0	00:01:13	<div style="width: 100%; height: 10px; background-color: green;"></div>
All Tests	1	1	0	00:01:13	<div style="width: 100%; height: 10px; background-color: green;"></div>

Statistics by Tag	Total	Pass	Fail	Elapsed	Pass / Fail
No Tags					<div style="width: 0%; height: 10px; background-color: green;"></div>

Statistics by Suite	Total	Pass	Fail	Elapsed	Pass / Fail
Test Files	1	1	0	00:01:13	<div style="width: 100%; height: 10px; background-color: green;"></div>
Test Files - Diskpool Test	1	1	0	00:01:13	<div style="width: 100%; height: 10px; background-color: green;"></div>





## ZFS

A revolutionary copy-on-write file system and volume manager with end-to-end data integrity and protection against silent data corruption.

## DTrace

A dynamic tracing framework that provides increased visibility and helps in troubleshooting kernel and application problems in real time.

## KVM

KVM is an in-kernel virtualization for fast hardware emulated guests including Windows, Linux, FreeBSD and other operating systems.

## COMSTAR

Common Multi-protocol SCSI Target is a smart technology that unifies the sharing of data using Fibre Channel, iSCSI and Infiniband.



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## Disaster recovery

Fast, unlimited snapshots with scheduling. On/off site incremental snapshot replication. Easy data recovery in just a few minutes.

## Server virtualization

On-appliance VMs with low network latency. Deduplication & compression for scalable VDI's. Storage tiering using SSDs for hot data caching.

## High availability

Active/active High Availability clustering. Unlimited number of pools within the cluster. Workload balancing between nodes.

## VMware integration

iSCSI and Fibre Channel LUN sharing  
Memory consistent virtual machine snapshots  
VMware automatic consolidated snapshots.

# syneto

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### Contact

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