Perf Tools - PerfPro

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AGENDA

01 Introduction

02 Configurations

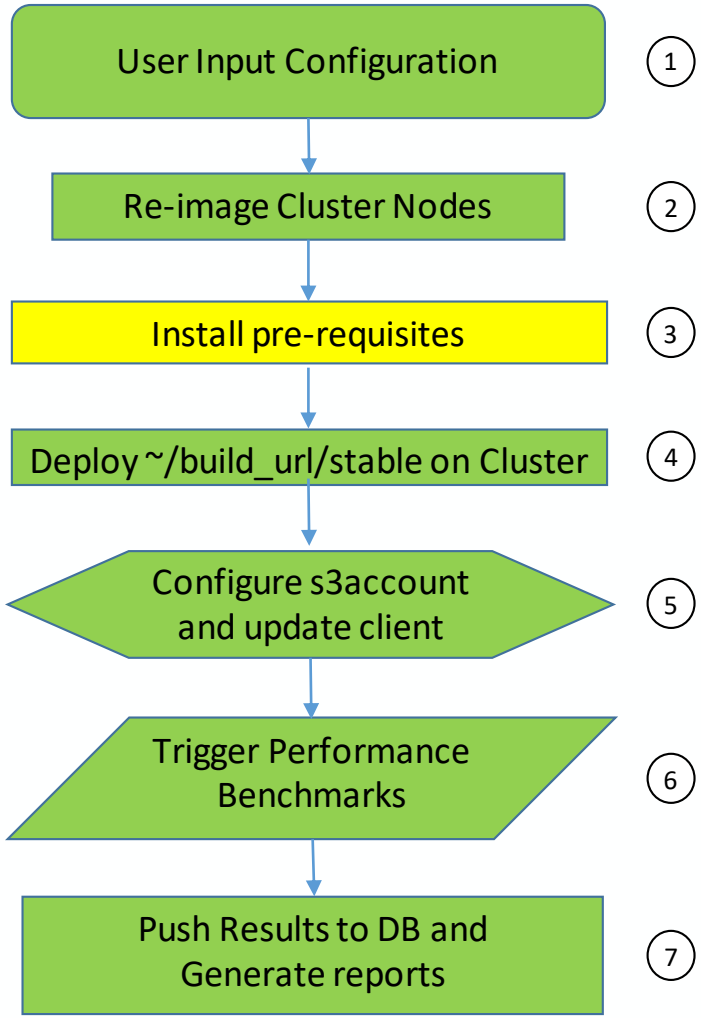
03 Dashboard Demo

04 Future Enhancements

What is PerfPro?

- PerfPro is a CORTX Benchmarking and Performance Tracking Tool
- **Can do**
  - Auto deploy CORTX Solution on HW
  - Setup Workload Environment and Run Workloads
  - Collect Stats / Artifacts from Setup(Systems and Benchmarks)
  - Provide Dashboard with Benchmark Report Summary and Graphs for Analysis/Comparison
- **Can't do**
  - Customize Benchmark Parameters
  - Display System Data on Dashboard
  - Benchmark Data as Time Series (AutoPerf to be used for this)

Execution Flow



Stage	Details
1	User provide input in configuration files (config.yaml and config.ini)
2	Cluster nodes get re-imaged via RedHat Satellite
3	Execute pre-requisites script which installs packages like Mellanox drivers, in-band configuration using scsi-network-relay, disables cross-connect using lsiutils
4	"stable" build gets auto_deployed on cluster with mentioned parameters for SUT
5	CSM Admin and s3account gets created. Access and secret Keys gets updated at client in aws/credentials file
6	Performance Benchmarks get triggered in sequential manner
7	IC1/2 MongoDB gets updated with PerfPro data and Reports get generated on CFT Dashboard

Deployment Configurations

User Input: Config.yaml

```
REIMAGE: ‘yes or no'
NODE1: <CORTX Cluster Primary Node>
NODE2: <CORTX Cluster Secondary Node>
CLIENT: <S3 Client Machine to run workloads/benchmarks>
BUILD_URL: http://ssc-nfs-srvr2.pun.seagate.com/releases/cortx_builds/centos-7.8.2003/531/iso/
BUILD: 531
OS_TYPE: CENTOS / RHEL / CORTX OS
CLUSTER_PASS: <password>
CHANGE_PASS: 'no'
# If you want to change server password(required mostly for colo location) then enter below details
SERVICE_USER: <user gid>
SERVICE_PASS: <password>
```

User Input: Config.ini

```
[cluster]
cluster_ip=<ip>
mgmt_vip=<ip>
[storage_enclosure]
type=5U84
controller.primary_mc.ip=10.0.0.3
controller.secondary_mc.ip=10.0.0.4
controller.user=manage
controller.secret=<password>
controller.type=gallium
[srvnode-1]
hostname=<FQDN of primary node>
```

Config.ini: continued…

```
network.mgmt_nw.iface=eno1
network.data_nw.public_ip_addr=<ip>
network.data_nw.iface=enp175s0f0, enp175s0f1
bmc.user=bmcadmin
bmc.secret=<password>
[srvnode-2]
hostname=<FQDN of primary node>
network.mgmt_nw.iface=eno1
network.data_nw.public_ip_addr=<ip>
network.data_nw.iface=enp175s0f0, enp175s0f1
bmc.user=bmcadmin
bmc.secret=<password>
```

Benchmark Configurations

Benchmarks	S3Bench, HSBench, COSBench
Clients / Sessions	100
Number of Objects	1000
Number of Buckets	1, 10, 50
Object Sizes	1KB, 4KB, 100KB, 1MB, 5MB, 36MB, 64MB, 128MB, 256MB

S3Bench	HSBench	COSBench
Throughput Write / Read	Throughput Write / Read	Throughput Write / Read
Latency Write / Read	Latency Write / Read	Latency Write / Read
IOPS Write / Read	IOPS Write / Read	IOPS Write / Read
TTFB Write / Read	-	-
Metadata Latencies • PutObjTag • GetObjTag • HeadObject	BucketOps • BucketInit • List • Put/Get/Del • BucketClear/BucketDel	MixedOps • Reads • Writes • Mix (50R-50W)

Execution Summary Example

PerfPro summary in decreasing order of time consumed by different steps at the end of execution.

```
Build: 398  (Fresh deploy)
Previous Build: 394 (Update from 394 to 398 was unsuccessful)
benchmark : [Cosbench]: Cosbench running ( size='4Kb,100Kb,1Mb,5Mb,36Mb' clients=100 samples=100 bucket=10,50 ) ---------------------- 6918.38s
benchmark : [Cosbench]: Cosbench running ( size='64Mb,128Mb,256Mb' clients=100 samples=100 bucket=10,50 ) ---------------------------- 6033.81s
perfpro_deployment : [deploy] : Deploy Cluster on Primary Node ------------------------------------------------------------------------ 5271.48s
benchmark : [Cosbench]: Cosbench running ( size='4Kb,100Kb,1Mb,5Mb,36Mb,64Mb' clients=100 samples=1000 bucket=1 ) --------------------- 4138.80s
benchmark : [HSbench-50-Buckets]: HSbench running ( Size='4Kb,100Kb,1Mb,5Mb,36Mb,64Mb,128Mb,256Mb' sample=5000 session=100 bucket=50 )- 3072.73s
benchmark : [Cosbench]: Cosbench running ( size='128Mb,256Mb' clients=100 samples=1000 bucket=1 ) ------------------------------------ 1639.00s
perfpro_deployment : [reimage] : Re-Image Node sm18-r19.pun.seagate.com , sm19-r19.pun.seagate.com Using Satellite API ---------------- 1032.22s
[S3bench-large-objects]: S3benchmark running ( size='36Mb,64Mb,128Mb,256Mb' clients=100 samples=2000 ) ---------------------------- 1004.45s
perfpro_deployment : [prov-prereq] : Run cortx-prereqs.sh on Secondary Node and Reboot ------------------------------------------------ 734.60s
benchmark : [HSbench-10-Buckets]: HSbench running ( Size='4Kb,100Kb,1Mb,5Mb,36Mb,64Mb,128Mb,256Mb' sample=1000 session=100 bucket=10 )- 599.69s
benchmark : [HSbench-1-Bucket]: HSbench running ( Size='4Kb,100Kb,1Mb,5Mb,36Mb,64Mb,128Mb,256Mb' sample=1000 session= 100 bucket=1 )--- 589.84s
perfpro_deployment : [download-iso] : download ISO from source ------------------------------------------------------------------------ 358.38s
perfpro_deployment : [reimage] : Wait for Server to Restart ---------------------------------------------------------------------------- 275.78s
perfpro_deployment : [issue-fix] : Wait for Server to Restart ------------------------------------------------------------------------- 257.35s
perfpro_deployment : [prov-prereq] : Wait for Nodes to Restart ------------------------------------------------------------------------ 256.42s
[S3bench-small-objects]: S3benchmark running ( size='4Kb,100Kb,1Mb,5Mb' clients=100 samples=5000 ) ------------------------------------ 197.32s
[S3bench-1Kb]: S3benchmark running ( size='1Kb' clients=50 samples=2000 ) ------------------------------------------------------------- 165.70s
perfpro_deployment : [prov-prereq] : Install Provisioner CLI on Primary Node ---------------------------------------------------------- 100.56s
perfpro_deployment : [inband] : Install scsi RPM Package ------------------------------------------------------------------------------- 81.44s
benchmark : [pre-requisites]: Required for regression test cases ----------------------------------------------------------------------- 51.34s
[930226@ssc-vm-1524 ~]$
```

Dashboard Demo

Enhancements Planned

- CORTX Support Bundle Collection
- Raw Test Data Storage & Accessibility
- PerfPro Execution Debug Log
- Support for LR 2.0
- CORTX Software components Update Support
- Support for new Applications – BareOS, Veeam, Splunk

Talk to us!

- PerfPro Location
  - Hosted at : cftic2.pun.seagate.com
  - Github Repository : Seagate/Seagate-tools
  - Demo Recording and these slides : Available Here

- Have query/suggestion/idea for PerfTools?
  - Email : cortx.perf@seagate.com
  - Jira : project = EOS AND component = Cortx-Perf

Q & A