# VessR2600 Application and Performance Notes

**Version 0.5**

**Date: 6/16/2015**

**Revision History**

| Revision | Date | Author | Description |
|---|---|---|---|
| 0.1 | 2/11/2015 | Steven Yang | Initial Draft |
| 0.2 | 3/13/2015 | Kinix Kao | Test Environment and Topology |
| 0.3 | 4/28/2015 | Kinix Kao | 1. Update “4.Test Environment and Topology” and “5.Storage Configuration”<br>2. Remove “Table 2” and “Table 3” that simulate ingesting by “dd”. |
| 0.4 | 5/27/2015 | Kinix Kao | 1. Add Table 2 ingest test result with capture device (Blackmagic UltraStudio 4K)<br>2. Add Table 3 ingest/playback test result |
| 0.5 | 6/16/2015 | Kinix Kao | 3. Update Table 2 and Table 3 with PTU test result. |

**Table of Contents**

# 1. Scope

This document summarizes current performance test data of Promise Vess R2600, as references for Product Marketing. This document will highlight real world video performance, Configurations, Topologies and also real world applications.

# 2. Executive Summary

Vess R2600 performance data is summarized in the following tables:

**Table 1 – Single Controller vs. Dual Controller Playback Test Results (OSX 10.10.2)**

| Playback | | Data Rate MBs | Single Controller | Dual Controller |
|---|---|---|---|---|
| App | Load | | | |
| FCPX 10.1.3 | PreRes4444 10bit QuadHD 3840x2160 @59.94fps .mov | 304.9 | 1 | 1 |
| | PreRes4444 10bit QuadHD 3840x2160 @50fps .mov | 254.4 | 1 | 2 |
| | PreRes4444 10bit QuadHD 3840x2160 @29.97fps .mov | 152.5 | 2 | 3 |
| | PreRes4444 10bit QuadHD 3840x2160 @23.98fps .mov | 122.1 | 3 | 6 |
| | Uncompressed 10bit 1920x1080@29.97fps .mov | 165.9 | 2 | 3 |
| | Uncompressed 10bit 1920x1080@23.97fps .mov | 132.6 | 3 | 6 |
| | ProRes 422 HQ (1080 @29.97fps) .mov | 27.8 | 11 | 22 |
| | DVCPro HD 1280x1080 @29.97fps.mov | 14.6 | 21 | 42 |

Notes:
- : Vess R2600 Version: 1.04.0000.01 Build Date: Mar 5, 2015

**Table 2 – Single Controller vs. Dual Controller Ingest Test Results (OSX 10.10.2)**

| Ingest | | Data Rate MBs | Single Controller | Dual Controller |
|---|---|---|---|---|
| App | Load | | | |
| Premiere Pro CC 8.0.0 | ProRes 422 HQ (1080 @29.97fps) .mov | 27.8 | 4^ | 4^ |

Notes:
- : Vess R2600 Version: 1.04.0000.01 Build Date: Mar 5, 2015
^: Result limited by client, only 4 clients was used.

**Table 3 – Single Controller vs. Dual Controller Ingest/Playback Test Results (OSX 10.10.2)**

| Ingest/Playback | | Data Rate MBs | Single Controller (Ingest/Playback) | Dual Controller (Ingest/Playback) |
|---|---|---|---|---|
| App | Load | | | |
| FCPX 10.1.3 Premiere Pro CC 8.0.0 | ProRes 422 HQ (1080 @29.97fps) .mov | 27.8 | 2/5 | 4/0 or 3/6 |

Notes:

- : Vess R2600 Version: 1.04.0000.01 Build Date: Mar 5, 2015

# 3. Test Purpose and Requirements

The purpose is to test the performance of Promise Vess R2600 single controller vs dual controller using A/V streaming loads.

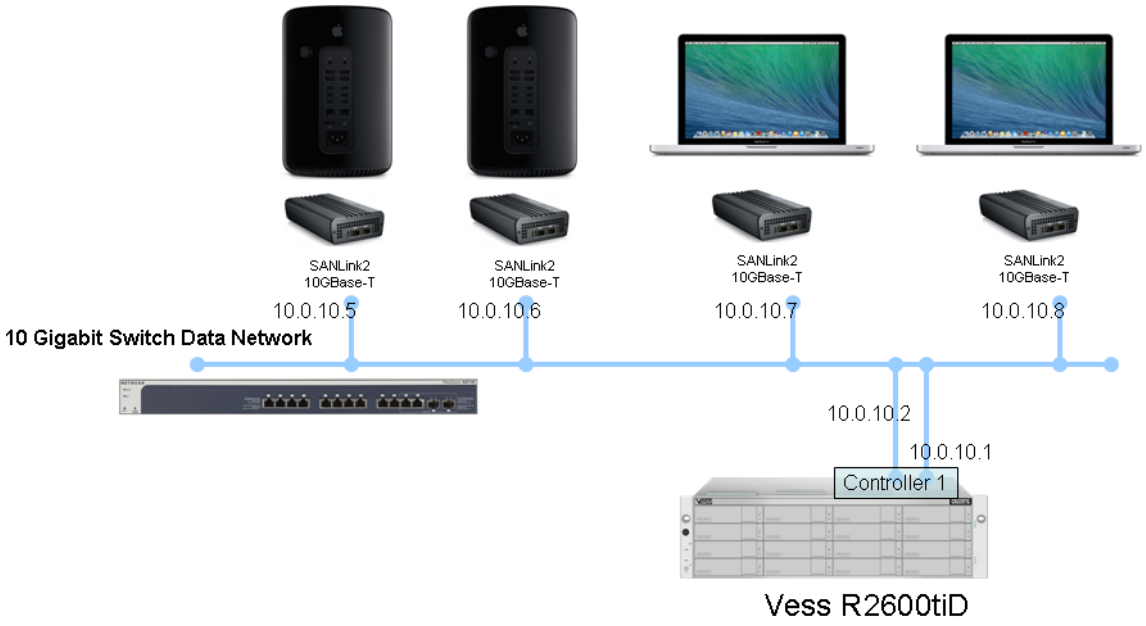
## 3.1 General Test Configuration and Applications

| | |
|---|---|
| **Platform** | Mac OSX 10.10.2 |
| **File System** | XFS |
| **Topology** | Four 10Gbit NAS clients |
| **Storage** | Vess R2600tiD Version: 1.04.0000.01 Build Date: Mar 5, 2015 |
| **Software** | Apple Final Cut Pro X – 10.1.3<br>Adobe Premiere Pro – CC8.0.0 |
| **Video Formats** | PreRes4444 10bit QuadHD 3840x2160 @59.94fps QuickTime media<br>PreRes4444 10bit QuadHD 3840x2160 @50fps QuickTime media<br>PreRes4444 10bit QuadHD 3840x2160 @29.97fps QuickTime media<br>PreRes4444 10bit QuadHD 3840x2160 @23.98fps QuickTime media<br>Uncompressed 10bit 1920x1080@29.97fps QuickTime media<br>Uncompressed 10bit 1920x1080@23.97fps QuickTime media<br>ProRes422 HQ (1080 @29.97fps) QuickTime media<br>DVCPro HD 1280x1080 @29.97fps QuickTime media<br>Uncompressed 10bit 1920x1080@25fps QuickTime media<br>Uncompressed 8bit 1920x1080@30fps QuickTime media |
| **Media Workload** | Playback<br>Ingest<br>Ingest & playback mixed |

## 4. Test Environment & Topology

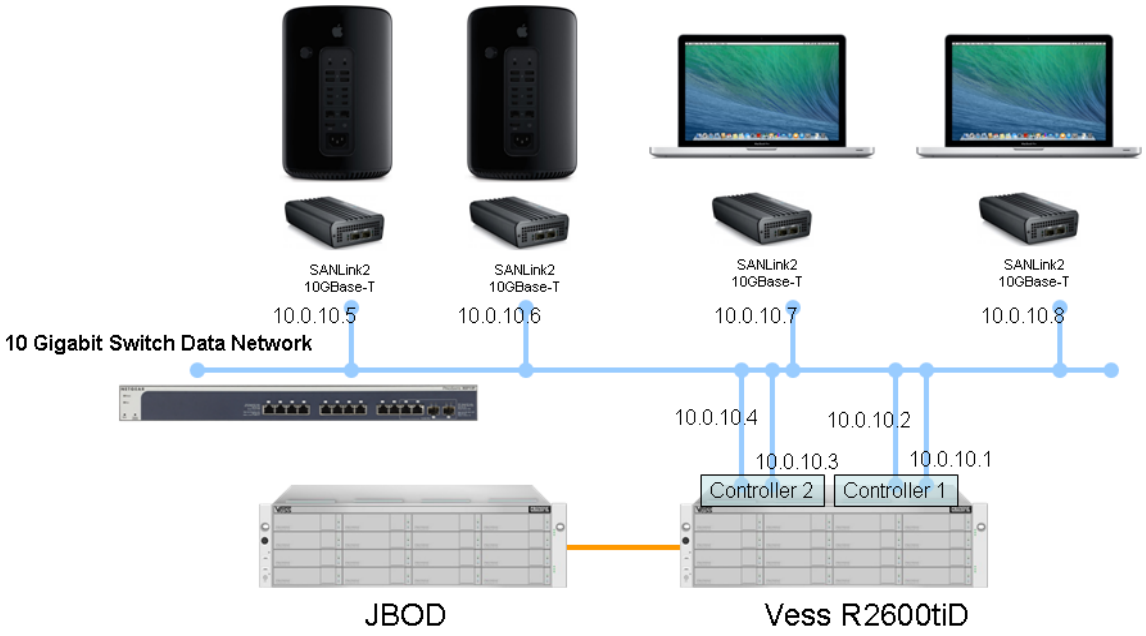
There are two 10Gbit Ethernet interfaces on each controller of Vess R2600tiD. We need to setup all the Mac clients and Vess R2600tiD in the same switch and give them some IP addresses. For example: give Vess R2600tiD IP address of 10.0.10.1 and 10.0.10.2. And set the IP address of Mac clients be 10.0.10.5, 10.0.10.6… and so on. After that, the Mac clients can access the storage of Vess R2600tiD via Samba by "Connect to Server" with smb://10.0.10.1 or smb://10.0.10.2.

**Figure 1 – 10Gbit NAS Test Topology – Single Controller**



In dual controller case, we also could put them all in the same sub-net. For example: give Vess R2600tiD controller1 IP address of 10.0.10.1 and 10.0.10.2 and controller2 IP address of 10.0.10.3 and 10.0.10.4. And set the IP address of Mac clients be 10.0.10.5, 10.0.10.6… and so on. After that, the Mac clients can access the storage of Vess R2600tiD controller1 via Samba by "Connect to Server" with smb://10.0.10.1 or smb://10.0.10.2 and controller2 with smb://10.0.10.3 or smb://10.0.10.4.

**Figure 2 – 10Gbit NAS Test Topology – Dual Controller**



# 5. Storage Configuration

Vess R2600tiD: Dual controller, 16GB memory per controller, Redundancy Type: Active-Active.

Controller: Adaptive Writeback Cache enabled, LUNAffinity disabled, ALUA disabled and ForcedReadAhead disabled.

Disk Pool: RAID Level: RAID5 and Stripe Size: 1MB.

Drives: Controller1: 16 HGST HUS724030ALS640 3TB drives for Disk Pool (DP1) with RAID5 and Share Disk (SD1)
Controller2: 16 HGST HUS724020ALS640 2TB drives for Disk Pool (DP2) with RAID5 and Share Disk (SD2)

Vess R2600tiD

| | | | |
|---|---|---|---|
| DP1(R5)-SD1 | DP1(R5)-SD1 | DP1(R5)-SD1 | DP1(R5)-SD1 |
| DP1(R5)-SD1 | DP1(R5)-SD1 | DP1(R5)-SD1 | DP1(R5)-SD1 |
| DP1(R5)-SD1 | DP1(R5)-SD1 | DP1(R5)-SD1 | DP1(R5)-SD1 |
| DP1(R5)-SD1 | DP1(R5)-SD1 | DP1(R5)-SD1 | DP1(R5)-SD1 |

JBOD

| | | | |
|---|---|---|---|
| DP2(R5)-SD2 | DP2(R5)-SD2 | DP2(R5)-SD2 | DP2(R5)-SD2 |
| DP2(R5)-SD2 | DP2(R5)-SD2 | DP2(R5)-SD2 | DP2(R5)-SD2 |
| DP2(R5)-SD2 | DP2(R5)-SD2 | DP2(R5)-SD2 | DP2(R5)-SD2 |
| DP2(R5)-SD2 | DP2(R5)-SD2 | DP2(R5)-SD2 | DP2(R5)-SD2 |

## 5.1 A/V Streaming Passing Criteria

No frame drop for ~1 hour streaming.