When TrueNAS Finally Swiped Right on Linux
A Little About Me

- Open Source Advocate for 15+ Years
- Worked on FreeBSD, PC-BSD, TrueOS, FreeNAS, TrueNAS Projects
- Have done Marketing, Documentation, Programming, Web Design at various projects
- Worked with iXsystems for a collective total of 12 years. Five as an open source and documentation developer and seven as a Marketing and Community Manager
A Little About Me

- Have helped grow the TrueNAS Community to well over half a million active users per month.
- About ten of these Community Users don’t have a sense of humor which makes it really fun to mess with them.
- April 1st is one of my favorite holidays.
I love a good joke on the Community

Joshua, AKA JoshDW19, said of the conceptualization of our new community mascot: “It is time we realize the importance of representing both Linux and FreeBSD together as one. Imagine how the planeteers would join forces back in the day and become Captain Planet. It’s kind of like that.” Marissa, the concept artist behind our new mascot (who tried to stay anonymous for unknown reasons) simply said: “Why…” and “Well, I guess it could be worse…” of the final product.
iXsystems is known for stewardship in Open Source and the production of secure, scalable, and cost-effective systems, built right here in the USA. But, customer requirements have quickly evolved and new, flexible, and universal storage solutions are needed to keep pace with data growth. Many of our customers began asking for expanded features along with the reliability of TrueNAS. Something that could provide the same security and reliability that they know with a more robust application experience, and the ability to scale out as their needs grow.
Why Did TrueNAS Swipe Right on Linux?

FreeNAS (2005)

TrueNAS (2013)

FreeNAS and TrueNAS were so similar that we gained significant efficiency by combining them into one image.

Unification (2020)

Enterprise

CORE
- FreeBSD
- Ideal for scaling up

SCALE
- Debian Linux
- Ideal for scaling out
Network-attached storage (NAS) is data storage that connects to and is accessed through a network, instead of connecting directly to a computer. A NAS consists of computer hardware and an operating system so it can provide the intelligence needed for files to be easily shared.
Why Did TrueNAS Swipe Right on Linux?

The Definition of NAS is Evolving

Traditional NAS

Next Generation NAS

Network
- LANs, VLANS
- Clustering
- VPNs & Clouds

Apps
- VMs
- Containers
- K8s Pods

Storage
- File
- Block
- Object

This + This
Why Did TrueNAS Swipe Right on Linux?

Finally, I have storage you can TRUST!
## Universal Storage and Apps

<table>
<thead>
<tr>
<th>S</th>
<th>Scale-Out ZFS</th>
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<tbody>
<tr>
<td>C</td>
<td>Converged Infrastructure</td>
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<tr>
<td>A</td>
<td>Always Available Storage</td>
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<tr>
<td>L</td>
<td>Linux Base &amp; Containers</td>
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<tr>
<td>E</td>
<td>Easy to use</td>
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### What Makes CORE and SCALE Different?

<table>
<thead>
<tr>
<th></th>
<th>CORE</th>
<th>SCALE</th>
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</thead>
<tbody>
<tr>
<td>Typical Use Cases</td>
<td>Simple &amp; Reliable Storage</td>
<td>Scale-Out Storage w/ VMs &amp; Containers</td>
</tr>
<tr>
<td>High Availability</td>
<td>None</td>
<td>Clustering</td>
</tr>
<tr>
<td>Scalability</td>
<td>Scale-up</td>
<td>Scale-up or Scale-out</td>
</tr>
<tr>
<td>Apps &amp; Plugins</td>
<td>Jails Only</td>
<td>Apps in Linux Containers (Docker) or Pods (K8s)</td>
</tr>
<tr>
<td>Support</td>
<td>Community Supported</td>
<td>Community Supported</td>
</tr>
<tr>
<td>Hardware</td>
<td>Third Party &amp; iXsystems</td>
<td>Third Party &amp; iXsystems</td>
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Containerization was a highly popular feature request for the last several years and though BSD has jails, the app ecosystem is significantly smaller than Linux.

Diversity of solutions gave the TrueNAS SCALE developers options when it came to containerization orchestration tools.

Jails on TrueNAS CORE were getting long in the tooth and difficult to support. Meanwhile, the ease of implementing an app store like experience with containers became much easier with Linux.
Scaling Out wasn’t an option with FreeBSD so we had to start looking to Linux for solutions on clustering. SCALE allows for scale-out SMB.

High Availability in FreeBSD doesn’t allow active-active availability, which means that to achieve higher uptime, we needed an additional solution.

Dynamic Development of the base OS is very good with Linux, and allows us to draw on more drivers and features that may not be available in FreeBSD.
Why Did TrueNAS Swipe Right on Linux?

Growing the TrueNAS Community

Linux appeals to a broad group of people in the Open Source community, allowing us to spread the word about TrueNAS to more individuals.

Widespread Adoption

Linux has a wide appeal commercially and allows us to compete in an additional market that we wouldn’t reach otherwise.

Technologies and Resource Management

Linux offers a comprehensive mix of technologies that allowed us to build the right solution. This technology also allows us to resource manage appropriately for a multi-node infrastructure.
## Core Technologies

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<tr>
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<th>Technology</th>
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<tbody>
<tr>
<td>1</td>
<td>TrueNAS Software Infrastructure</td>
<td></td>
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<tr>
<td>2</td>
<td>Debian Linux Kernel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>OpenZFS Snapshots and Self-Healing</td>
<td></td>
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<td>4</td>
<td>Gluster Scale Out</td>
<td></td>
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<tr>
<td>5</td>
<td>MiniO Simple &amp; Scalable Object Storage</td>
<td></td>
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<tr>
<td>6</td>
<td>Kubernetes &amp; Native Docker Containers and Apps</td>
<td></td>
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<tr>
<td>7</td>
<td>S3 API Cloud Storage Interface</td>
<td></td>
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<tr>
<td>8</td>
<td>KVM Virtual Machines</td>
<td></td>
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TrueNAS SCALE is Open Source

Open Storage
SMB, NFS, iSCSI, S3 API
OpenZFS, Gluster, MiniO

Open Virtualization
Kubernetes
Debian, KVM

Open APIs
REST & Websocket APIs
Kubernetes, Helm Charts

Open Source
BSD, MIT and GPL licenses
GitHub, Jenkins, Hugo Docs, Community

10,000+ Developers and Testers
500,000+ of Community members
TrueNAS SCALE Provides

- Ease to Use
- Reliability of Linux + ZFS
- Patch Management
- Community and Professional Support Available
- Proven Platform of TrueNAS
- Simple Upgrades
Additional Features

- Web GUI & WebUI Updates
- Hundreds of QA Cycles & Thousands of Tests
- Improved Version Control
- A Community of 500,000+
- Open Project Management
- Rest API & CLI
- 24/7 US-Based Enterprise Support for Business
- TrueCommand Multi-system Management
- Hundreds of QA Cycles & Thousands of Tests
TrueNAS App Catalogs and Trains

Well organized Kubernetes Apps for operating in any environment.
TrueNAS Apps
“Wait, is TrueNAS CORE going away?!”

NOPE!

iXsystems is supporting both projects simultaneously and both offer important pros and cons. In this talk, we focus more on Linux.
“Is There a Reason I Should Choose CORE Over SCALE?”

It Depends

Are you only planning on utilizing one system? Are you planning to utilize apps on your NAS? If you don’t need some of these features, TrueNAS CORE is a very mature storage platform and is legendary for its ability to protect data.
“Who the Heck is iXsystems?”

iXsystems started and still works with many Open Source projects. They’re a computer server and storage manufacturer that competes with Dell, NetApp, and Pure Storage. They provide high quality systems at competitive prices with our manufacturing facility in San Jose, California and our growing team of Support Professionals and Developers out of Tennessee.
“How’s the Community Reception?"

It’s Been Good

We aren’t seeing a lot of tribal behavior or concern. The overwhelming majority are most interested in an open source product that works.
## TrueNAS SCALE For Business

### User Type

<table>
<thead>
<tr>
<th>User Type</th>
<th>ENTERPRISE</th>
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<tbody>
<tr>
<td>Developer</td>
<td>N/A</td>
</tr>
<tr>
<td>Tester</td>
<td>TrueNAS 13.0-U4</td>
</tr>
<tr>
<td>Early Adopter</td>
<td>TrueNAS 13.0-U4</td>
</tr>
<tr>
<td>General</td>
<td>TrueNAS 13.0-U4</td>
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<tr>
<td>Conservative</td>
<td>TrueNAS 13.0-U4</td>
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<tr>
<td>Mission Critical</td>
<td>TrueNAS 13.0-U4</td>
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Important Links and Resources

- Download TrueNAS SCALE
- Learn More About TrueNAS SCALE
- TrueNAS SCALE Documentation
- TrueNAS SCALE Introduction Video
- TrueNAS SCALE Datasheet
QUESTIONS
Thank You