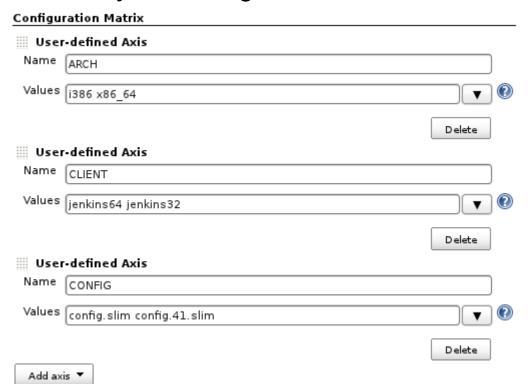# NFS Automated Testing and Fault Injection
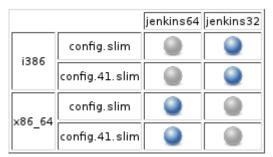
bryan.schumaker@netapp.com

Jenkins

- Continuous integration server
- Jobs with many variables
- Easy to configure and administer

Configuration Matrix

⠿ **User-defined Axis**

Name: ARCH

Values: i386 x86_64 ▼ ⓘ

[Delete]

⠿ **User-defined Axis**

Name: CLIENT

Values: jenkins64 jenkins32 ▼ ⓘ

[Delete]

⠿ **User-defined Axis**

Name: CONFIG

Values: config.slim config.41.slim ▼ ⓘ

[Delete]

[Add axis ▼]

Configuration Matrix

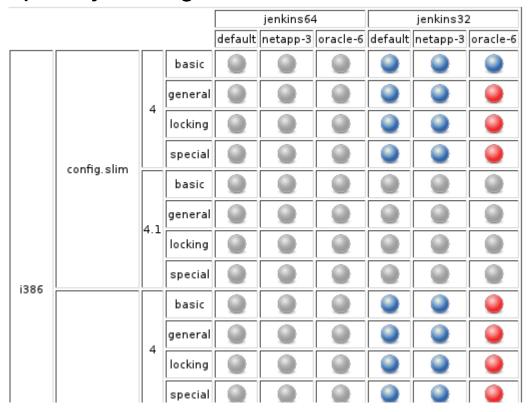|		jenkins64	jenkins32
i386	config.slim	⚪	🔵
	config.41.slim	⚪	🔵
x86_64	config.slim	🔵	⚪
	config.41.slim	🔵	⚪

Basic Setup

- Iterates through all possibilities
- Can filter out combinations that don't make sense
- Can quickly configure hundreds of tests

				jenkins64			jenkins32		
				default	netapp-3	oracle-6	default	netapp-3	oracle-6
i386	config.slim	4	basic	⚪	⚪	⚪	🔵	🔵	🔵
			general	⚪	⚪	⚪	🔵	🔵	🔴
			locking	⚪	⚪	⚪	🔵	🔵	🔴
			special	⚪	⚪	⚪	🔵	🔵	🔴
		4.1	basic	⚪	⚪	⚪	⚪	⚪	⚪
			general	⚪	⚪	⚪	⚪	⚪	⚪
			locking	⚪	⚪	⚪	⚪	⚪	⚪
			special	⚪	⚪	⚪	⚪	⚪	⚪
		4	basic	⚪	⚪	⚪	🔵	🔵	🔴
			general	⚪	⚪	⚪	🔵	🔵	🔴
			locking	⚪	⚪	⚪	🔵	🔵	🔴
			special	⚪	⚪	⚪	🔵	🔵	🔴

Changes since Connectathon

- Multiconfiguration projects

- Test against multiple clients and servers

- Better per-machine configuration

- Easier to add tests, machines, whatever

Fault Injection

- Easy way to trigger rare errors
- Good for testing client state recovery
- Control through debugfs

Questions?