Automatic DMF Configuration for Infinite Storage Gateway

Al Stipek Tech Lead, Storage Software Greg Banks Principal Engineer, Storage Software

sgi

©2013 SGI

DMF Configuration Can Be...



- Difficult
- Confusing
- Tedious
- Time Consuming
- Daunting



So We Added



The ISG DMF Big Easy Button



First Set Up Your ISG



Install the Hardware



©2013 SGI

Supported Tape Libraries

- All SpectraLogic libraries
- All SCSI-based Oracle tape libraries

not ACSLS yet – extra work

- Copan shelves
- Quantum libraries "sometime soon"

Begin Software Configuration

- Attach the machine to the network
- Use SMC-IS to...
 - Give the machine a name
 - Cobble together 2 file systems
 - /dmfusr1 without LiveArc
 - /dmfusr2 with LiveArc

Begin Software Configuration

- Attach the machine to the network
- Use SMC-IS to...
 - Give the machine a name
 - Cobble together 2 file systems
 - /dmfusr1 without LiveArc
 - /dmfusr2 with LiveArc

Now You Can Configure DMF





🧶 🕟	burn - Mozilla Firefo	x 🛇 🛇 🗴
Firefox ✓ sgi burn	4	
sgi	InfiniteStorage™ Gateway	/ Management Center
Monitoring Management	Server: burn.americas.sgi.com	Refresh Help 🔻 Log Out
Management x	DMF Configuration	
Storage Filesystems DMF Configuration Services NFS Exports CIFS Shares Failure Notification	 Probe Hardware Libraries Available for Configuration Vendor: SGI Product: COPAN Serial Number: 8VM Library Name L00 Use Shelves Available for Configuration Vendor: SGI Serial Number: COPANSYS00000000 Shelf Name C00 Use the User Filesystems Available for DMF Management 	DMF owns all the hardware, shows it here, and will configure what you request this library for backups 080300176 WWPN: 5000ed55f86d0301 WWPN: 5000ed55f86d0302 his shelf for backups ent
System Operations	 /dmfusr1 Online Bytes 4096 /dmfusr2 (/xfs_private/dmfusr2) Required Information DMF Admin Email Confirm DMF Admin Email DMF Manager Password Confirm DMF Manager Password Apply Help 	/dmfusr2 was earlier chosen for LiveArc

🧶 🕑	burn - Mozilla Firefox	\odot \odot \otimes	
Firefox ✓ sgi burn	*		
sgi	InfiniteStorage [™] Gateway Management Center		
Monitoring Management	Server: burn.americas.sgi.com Refresh Hel	p 🔻 Log Out	
Management	x DMF Configuration		
Storage	Probe Hardware		
<u>Filesystems</u>	Libraries Available for Configuration		
DMF <u>Configuration</u> <u>Services</u>	Vendor: SGI Product: COPAN Serial Number: 8VM1008S00		
NFS Exports	Shelves Available for Configuration You must chose a library for ha	ackune	
CIFS Shares	CIFS Shares Vendor: SGI Serial Number: COPANSYS00000080300176 WWPN: 5000ed55f86d0301 WWPN: 5000ed55f86d0302 Failure Notification Copanies		
Failure Notification			
	User Eilegesteme Ausileble for DME Management	- 11	
	YOU don't need to choose	all	
	✓ /dmfusr1 the hardware yet		
	<pre>/dmfusr2 (/xfs_private/dmfusr2)</pre>		
	Demuired Information		
	Confirm DMF Admin Email dmf_admin@sgi.com	aguard	
System	Enter an aumin email & pa	issword	
Operations	Confirm DMF Manager Password		
	Apply Help		
	Click Apply		

🧶 🕟	burn - Mozilla Firefox	\odot \odot \otimes
Firefox 🗙 😽 sgi burn		
sgi	InfiniteStorage [™] Gateway Management Center	
Monitoring Management	Server: burn.americas.sgi.com	Help 🔻 Log Out
Management x	DMF Configuration	
Storage Filesystems DMF Configuration Services NFS Exports CIFS Shares Failure Notification	Configuration Progress. Updated: Sun Dec 01 2013 04:37:35 GMT-0600 (CST) Estimating time to completion. DMF estimates how long it will take to configure the chosen hardware and filesystems. Now is a good time to be thinking about	
System	getting a	
	cup of coffee.	

ا ا	burn - Mozilla Firefox	\odot \odot \otimes
Firefox 🗸 😽 sgi burn		
sgi	InfiniteStorage [™] Gateway Management Center	
Monitoring Management	Server: burn.americas.sgi.com Refresh Help 🔻	Log Out
Management x	DMF Configuration	
StorageFilesystemsDMFConfiguration ServicesNFS ExportsCIFS SharesFailure Notification	Configuration Progress. Updated: Sun Dec 01 2013 04:37:49 GMT-0600 (CST) Estimated time to completion: 16 minutes 10 seconds. Summary: Configure Libraries: L00 Configure Filesystems: /dmfusr1, Send email to: dmf_admin@sgi.com Step 1 of 6 : Confirm parameters and system requirements. In step 1, DMF validates your inputs and checks the hardware and filesystems.	
System Operations		

🥘 🕑	burn - Mozilla Firefox	\odot \otimes \otimes
Firefox x Sgi burn		
sgi	InfiniteStorage [™] Gateway Management Center	
Monitoring Management	Server: burn.americas.sgi.com Refresh Help	D 🔻 Log Out
Management x	DMF Configuration	
Storage	Configuration Progress.	
<u>Filesystems</u>	Updated: Sun Dec 01 2013 04:38:00 GMT-0600 (CST)	
DMF <u>Configuration</u> Services	Summary: Configure Libraries: L00 Configure Filesystems: /dmfusr1, Send email to: dmf_admin@sgi.com	
NFS Exports	Step 1 of 6 : Confirm parameters and system requirements.	
<u>CIFS Shares</u> Failure Notification	Step 2 of 6 : Configure library or libraries. Configure L00 8VM1008S00	
	In step 2, DMF configures all	
	selected libraries or shelves	
System		
Operations		

ا 🕘 💿	burn - Mozilla Firefox	\odot \odot \otimes
Firefox ✓ sgi burn		
sgi	InfiniteStorage [™] Gateway Management Center	
Monitoring Management	Server: burn.americas.sgi.com Refresh Help 🔻	Log Out
Management x	DMF Configuration	
Storage Filesystems DMF Configuration Services NFS Exports CIFS Shares Failure Notification	Configuration Progress. Updated: Sun Dec 01 2013 04:38:41 GMT-0600 (CST) Estimated time to completion: 11 minutes 0 seconds. Summary: Configure Libraries: L00 Configure Filesystems: /dmfusr1, Send email to: dmf_admin@sgi.com Step 1 of 6 : Confirm parameters and system requirements. Step 2 of 6 : Configure library or libraries. Configure L00 8VM1008S00 Step 3 of 6 : Add library volumes. In step 3, DMF adds all the volumes present in libraries and shelves.	
System Operations		

🧶 🕟	burn - Mozilla Firefox	\odot \odot \otimes	
Firefox x Sgi burn			
Sgi	InfiniteStorage [™] Gateway Management Center		
Monitoring Management S	Server: burn.americas.sgi.com Refresh Help 🔻	Log Out	
Management x	DMF Configuration		
Storage	Configuration Progress. Updated: Sun Dec 01 2013 04:38:52 GMT-0600 (CST)		
DMF Configuration	Estimated time to completion: 8 minutes 0 seconds.		
Services NFS Exports	Summary: Configure Libraries: L00 Configure Filesystems: /dmfusr1, Send email to: dmf_admin@sgi.com Step 1 of 6 : Confirm parameters and system requirements.		
<u>CIFS Shares</u> Failure Notification	Step 2 of 6 : Configure library or libraries. Configure L00 8VM1008S00		
	Step 3 of 6 : Add library volumes. Added 115 volumes to DME and 30 volumes for backup.		
	Step 4 of 6 : Configure DMF for filesystem(s).		
	In stop 4 DME croates (or		
	updates) the dmf.conf file for		
System	filesystems and libraries		
Operations			

🥹 🖸	burn - Mozilla Firefox	\odot \odot \otimes	
Firefox 🗸 🛛 sgi burn	4		
sgi	InfiniteStorage [™] Gateway Management Center		
Monitoring Management	Server: burn.americas.sgi.com Refresh Help 🔻	Log Out	
Management >	DMF Configuration		
Storage	Configuration Progress.		
Filesystems	Updated: Sun Dec 01 2013 04:39:54 GMT-0600 (CST)		
DMF Configuration Services	Summary: Configure Libraries: L00 Configure Filesystems: /dmfusr1, Send email to: dmf_admin@sgi.com		
NFS Exports	Step 1 of 6 : Confirm parameters and system requirements. Step 2 of 6 : Configure library or libraries. Configure L00 8VM1008S00 Step 3 of 6 : Add library volumes. Added 115 volumes to DME and 30 volumes for backup.		
<u>CIFS Shares</u>			
randre Notification			
	Step 4 of 6 · Configure DME for filesystem(s)		
	Step 5 of 6 : Initializing the DMF audit system.		
	In step 5. DME initializes the DME		
	audit system.		
System			
Operations	This runs audits nightly to make		
	sure all is well with the databases.		

	burn - Mozilla Firefox	$\odot \odot \otimes$
Sgi burn	InfiniteStorage [™] Gateway Management Center	
Monitoring Management	Server: burn.americas.sgi.com Refresh Help 🔻	Log Out
Management x Storage Filesystems DMF Configuration Services NFS Exports CIFS Shares Failure Notification	DMF Configuration Configuration Progress. Updated: Sun Dec 01 2013 04:41:18 GMT-0600 (CST) Estimated time to completion: 5 minutes 0 seconds. Summary: Configure Libraries: L00 Configure Filesystems: /dmfusr1, Send email to: dmf_admin@sgi.com Step 1 of 6 : Configure library or libraries. Configure L00 8VM1008S00 Step 3 of 6 : Add library volumes. Added 115 volumes to DMF and 30 volumes for backup. Step 5 of 6 : Configure DMF for filesystem(s). Step 5 of 6 : Initializing the DMF audit system. Step 6 of 6 : Starting systems.	
System Operations	In step 6, DMF runs a dmcheck and will complai there are any errors. ANY error would be unexpected at this point and would require SGI support. DMF then starts the DMF and Openvault service	n if S.

9 🕤	burn - Mozilla Firefox	$\odot \odot $
Firefox ✔ Sgi burn	+	
sgi	InfiniteStorage [™] Gateway	Management Center
Monitoring Managemen	t Server: burn.americas.sgi.com	Refresh Help 🔻 Log Out
Management	x DMF Configuration	
Storage	Configuration completed.	
<u>Filesystems</u>	Summary: Configure Libraries: L00 Configure Filesyste	ms: /dmfusr1, Send email to: dmf_admin@sgi.com
DMF <u>Configuration</u> <u>Services</u> <u>NFS Exports</u> <u>CIFS Shares</u> <u>Failure Notification</u>	Step 1 of 6 : Confirm parameters and system requiredStep 2 of 6 : Configure library or libraries. Configure L00 8VM1008S00Step 3 of 6 : Add library volumes. Added 115 volumes to DMF and 30 volumes for backueStep 4 of 6 : Configure DMF for filesystem(s).Step 5 of 6 : Initializing the DMF audit system.Step 6 of 6 : Starting systems.DMF State: ATTENTION Messages: There are 1 priority 1 alerts Last Update: 2013-12-01T09:40:58	The system is configured and ready to go. P. A summary is stored on the system in a text format that can be retrieved by DMF Manager, or by logging into the system.
System Operations	Mailing dmf_admin@sgi.com The summary is also mailed the DMF admin email.	
	All configuration steps and to a logfile for later diagno	d detailed steps are saved ostic use.







•	burn - Mozilla Firefox	\odot \odot
Firefox ✓ sgi burn	🔕 🛐 DMF Manager 🛛 😣 💠	
sgi	InfiniteStorage [™] Gateway	Management Center
Monitoring Management	Server: burn.americas.sgi.com	Refresh Help 🔻 Log Out
Management x	DMF Configuration	
Storage	Probe Hardware This library has b	een configured
Filesystems DMF Configuration Services NFS Exports CIFS Shares Failure Notification	Configured Libraries L00 - Vendor: SGI Product: COPAN Serial Number: 8VM100 Reconfigure Library Shelves Available for Configuration Vendor: SGI Serial Number: COPANSYS000000008030 Shelf Name CO0 Configured Filesystems /dmfusr1 User Filesystems Available for DMF Management /dmfusr2 (/xfs_private/dmfusr2) Recent Log Apply Help	You can reconfigure it: add/remove/swap drives, add volumes, repair a configuration that has cables swapped WPN: 5000ed55f86d0301 WWPN: 5000ed55f86d0302 You can add new libraries. This filesystem has been configured.
System		You can add new filesystems.
Operations		

Bob's Your Uncle

- Repeat until all the libraries and all the filesystems are configured
- Then you're done!
- Have a donut...









