Environnement
Les modes
# set -privilege advanced	Enter into privilege mode
# set -privilege johnnostic	Enter into johnnostic mode
# set -privilege admin	Enter into admin mode
Vue d'ensemble
# storage aggregate show -state !online	show all aggregates that are not online
# system node image show	Show the running Data Ontap versions and which is the default boot
# dashboard performance show	Shows a summary of cluster performance including interconnect traffic
# node run * environment shelf	Shows information about the Shelves Connected including Model Number
Configuration
|# system node run – node local sysconfig -a | Run sysconfig on the local node |
|# node run -node -command sysstat -c 10 -x 3 | Running the sysstat performance tool with cluster mode |

Utilisateurs
Information
# suseradmin whoami	Displays the user name of the account you are currently using
# suseradmin user list	Lists all administrative users configured for this storage system
# suseradmin user list user_name	Lists the extended information for a specific administrator
# suseradmin user list -x	Lists the extended information for all administrators
# suseradmin user list -g grp_name	Lists information for all users assigned to a specified group
# suseradmin domainuser list -g group_name	Lists the Security Ids of all domain administrative users assigned to a specified group
# suseradmin group list	Lists all the administrative user groups configured for this storage system
# suseradmin group list group_name	Lists the extended details for a specified single group
# suseradmin role list	Lists all the roles configured for this storage system. Each role entry lists the role name, comment information, and allowed capabilities
# suseradmin role list role_name	Lists the information for a single specified role name
Configuration
# security login unlock -username john	Unlock the john user
# security login password -username john	Set a password for the john user
# security login show -username john	Show the john user
Session
|# system timeout modify 30 | Sets system timeout to 30 minutes |
|# system timeout show| displays the timeout value for CLI sessions |

Backup
# system configuration backup create -backup-name node1-backup -node node1	Create a cluster backup from node1
# system configuration backup create -backup-name node1-backup -node node1 -backup-type node	Create a node backup of node1
# system configuration backup upload -node node1 -backup node1.7z -destination ftp://username:password@ftp.server.com	Uploads a backup file to ftp

LOGS
|# debug vreport show | must be run in priv -set john, shows WAFL and VLDB consistency |
|# event log show -messagename scsiblade.* | show that cluster is in quorum-service |
To look at the logs within clustered ontap you must log in as the john user to a specific node
```
# set -privilege advanced
# systemshell -node
 username: john - password:
# cd /mroot/etc/mlog
# cat command-history.log | grep volume // searches the command-history.log file for the keyword volume
exit
```

Service Processor
# system node image get -package http://webserver/306-02765_A0_SP_3.0.1P1_SP_FW.zip -replace-package true	Copies the firmware file from the webserver into the mroot directory on the node
# system node service-processor image update -node node1 -package 306-02765_A0_SP_3.0.1P1_SP_FW.zip -update-type differential	Installs the firmware package to node1
# system node service-processor show	Show the service processor firmware levels of each node in the cluster
# system node service-processor image update-progress show	Shows the progress of a firmware update on the Service Processor

Cluster
# cluster statistics show	shows statistics of the cluster – CPU, NFS, CIFS, FCP, Cluster Interconnect Traffic
# cluster ring show -unitname vldb	check if volume location database is in quorum-service
# cluster ring show -unitname mgmt	check if management application is in quorum-service
# cluster ring show -unitname vifmgr	check if virtual interface manager is in quorum-service
# cluster ring show -unitname bcomd	check if san management daemon is in quorum-service
# cluster unjoin	must be run in priv -set admin, disjoins a cluster node. Must also remove its cluster HA partner
# debug vreport show	must be run in priv -set john, shows WAFL and VLDB consistency
# event log show -messagename scsiblade.*	show that cluster is in quorum-service

Node
|# system node rename -node -newname | |
|# system node reboot -node NODENAME -reason ENTER REASON | Reboot node with a given reason. NOTE: check ha policy |

FLASH CACHE
# system node run -node * options flexscale.enable on	Enabling Flash Cache on each node
# system node run -node * options flexscale.lopri_blocks on	Enabling Flash Cache on each node
# system node run -node * options flexscale.normal_data_blocks on	Enabling Flash Cache on each node
# node run NODENAME stats show -p flexscale	fashcache configuration
# node run NODENAME stats show -p flexscale-access	display flash cache statistics

FLASH POOL
```
|# storage aggregate modify -hybrid-enabled true | Change the AGGR to hybrid |
|# storage aggregate add-disks -disktype SSD | Add SSD disks to AGGR to begin creating a flash pool |
|# priority hybrid-cache set volume1 read-cache=none write-cache=none | Within node shell and john mode disable read and write cache on volume1 |
```

FAIL-OVER
```
|# storage failover takeover -bynode | Initiate a failover |
|# storage failover giveback -bynode | Initiate a giveback |
|# storage failover modify -node -enabled true | Enabling failover on one of the nodes enables it on the other |
|# storage failover show | Shows failover status |
|# storage failover modify -node -auto-giveback false | Disables auto giveback on this ha node |
|# storage failover modify -node -auto-giveback enable | Enables auto giveback on this ha node |
|# aggregate show -node NODENAME -fields ha-policy | show SFO HA Policy for aggregate |
```

AGGREGATES
```
|# aggr create -aggregate -diskcount -raidtype raid_dp -maxraidsize 18 | Create an AGGR with X amount of disks, raid_dp and raidgroup size 18 |
|# aggr offline | online | Make the aggr offline or online |
|# aggr rename -aggregate -newname| |
|# aggr relocation start -node node01 -destination node02 -aggregate-list aggr1 | Relocate aggr1 from node01 to node02 |
|# aggr relocation show | Shows the status of an aggregate relocation job |
|# aggr show -space | Show used and used% for volume foot prints and aggregate metadata |
|# aggregate show | show all aggregates size, used% and state |
|# aggregate add-disks -aggregate -diskcount | Adds a number of disks to the aggregate |
|# reallocate measure -vserver vmware -path /vol/datastore1 -once true | Test to see if the volume datastore1 needs to be reallocated or not |
|# reallocate start -vserver vmware -path /vol/datastore1 -force true -once true | Run reallocate on the volume datastore1 within the vmware vserver |
```

DISKS
```
|# storage disk assign -disk 0a.00.1 -owner | Assign a specific disk to a node |
|# storage disk assign -count -owner | Assign unallocated disks to a node |
|# storage disk show -ownership | Show disk ownership to nodes |
|# storage disk show -state broken | copy | maintenance | partner | percent | reconstructing | removed | spare | unfail |zeroing | Show the state of a disk |
|# storage disk modify -disk NODE1:4c.10.0 -owner NODE1 -force-owner true | Force the change of ownership of a disk |
|# storage disk removeowner -disk NODE1:4c.10.0 -force true | Remove ownership of a drive |
|# storage disk set-led -disk Node1:4c.10.0 -action blink -time 5 | Blink the led of disk 4c.10.0 for 5 minutes. Use the blinkoff action to turn it off |
```

LUNS
```
|# lun show -vserver | Shows all luns belonging to this specific vserver |
|# lun modify -vserver -space-allocation enabled -path | Turns on space allocation so you can run lun reclaims via VAAI |
|# lun geometry -vserver path /vol/vol1/lun1 | Displays the lun geometry |
```

VSERVER Commands
# vserver setup	Runs the clustered ontap vserver setup wizard
# vserver create -vserver -rootvolume	Creates a new vserver
# vserver show	Shows all vservers in the system
# vserver show -vserver	Show information on a specific vserver

NFS
|# vserver modify -4.1 -pnfs enabled | Enable pNFS. NOTE: Cannot coexist with NFSv4 |

FCP
# storage show adapter	Show Physical FCP adapters
# fcp adapter modify -node NODENAME -adapter 0e -state down	Take port 0e offline
# node run fcpadmin config	Shows the config of the adapters – Initiator or Target
# node run -t target 0a	Changes port 0a from initiator or target – You must reboot the node

CIFS Shares Configuration
# vserver cifs create -vserver -cifs-server -domain	Enable Cifs
# vserver cifs share create -share-name root -path /	Create a CIFS share called root
# vserver cifs share show	
# vserver cifs show	

SNAPSHOTS
# volume snapshot create -vserver vserver1 -volume vol1 -snapshot snapshot1	Create a snapshot on vserver1, vol1 called snapshot1
# volume snapshot restore -vserver vserver1 -volume vol1 -snapshot snapshot1	Restore a snapshot on vserver1, vol1 called snapshot1
# volume snapshot show -vserver vserver1 -volume vol1	Show snapshots on vserver1 vol1

DP MIRRORS AND SNAPMIRRORS
# volume create -vserver -volume vol10_mirror -aggregate -type DP	Create a destinaion Snapmirror Volume
# snapmirror create -vserver -source-path sysadmincluster://vserver1/vol10 -destination -path sysadmincluster://vserver1/vol10_mirror -type DP	Create a snapmirror relationship for |# sysadmincluster
# snapmirror initialize -source-path sysadmincluster://vserver1/vol10 -destination-path sysadmincluster://vserver1/vol10_mirror -type DP -foreground true	Initialize the snapmirror example
# snapmirror update -source-path vserver1:vol10 -destination-path vserver2:vol10_mirror -throttle 1000	Snapmirror update and throttle to 1000KB/sec
# snapmirror modify -source-path vserver1:vol10 -destination-path vserver2:vol10_mirror -throttle 2000	Change the snapmirror throttle to 2000
# snapmirror restore -source-path vserver1:vol10 -destination-path vserver2:vol10_mirror	Restore a snapmirror from destination to source
# snapmirror show	show snapmirror relationships and status
NOTE: You can create snapmirror relationships between 2 different clusters by creating a peer relationship

VOLUMES
# volume create -vserver -volume -aggregate -size 100GB -junction-path /eng/p7/source	Creates a Volume within a vserver
# volume move -vserver -volume -destination-aggregate -foreground true	Moves a Volume to a different aggregate with high priority
# volume move -vserver -volume -destination-aggregate -cutover-action wait	Moves a Volume to a different aggregate with low priority but does not cutover
# volume move trigger-cutover -vserver -volume	Trigger a cutover of a volume move in waiting state
# volume move show	shows all volume moves currently active or waiting. NOTE: You can only do 8 volume moves at one time, more than 8 and they get queued
# system node run – node vol size 400g	resize volume_name to 400GB	OR
# volume size -volume -new-size 400g	resize volume_name to 400GB
# volume modify -vserver -filesys-size-fixed false -volume	Turn off fixed file sizing on volumes

SNAPVAULT
|# snapmirror create -source-path vserver1:vol5 -destination-path vserver2:vol5_archive -type XDP -schedule 5min -policy backup-vspolicy | Create snapvault relationship with 5 min schedule using backup-vspolicy |
NOTE: Type DP | asynchronous | , LS | load-sharing mirror | , XDP | backup vault, snapvault | , TDP | transition | , RST | transient restore |

NETWORK INTERFACE
# network interface show	show network interfaces
# network port show	Shows the status and information on current network ports
# network port modify -node * -port -mtu 9000	Enable Jumbo Frames on interface vif_name>
# network port modify -node * -port -flowcontrol-admin none	Disables Flow Control on port data_port_name
# network interface revert *	revert all network interfaces to their home port

INTERFACE GROUPS
# ifgrp create -node -ifgrp -distr-func ip -mode multimode	Create an interface group called vif_name on node_name
# network port ifgrp add-port -node -ifgrp -port	Add a port to vif_name
# net int failover-groups create -failover-group data__fg -node -port	Create a failover group – Complete on both nodes
# ifgrp show	Shows the status and information on current interface groups
# net int failover-groups show	Show Failover Group Status and information

UNIX
# vserver services unix-user show	
# vserver services unix-user create -vserver vserver1 -user root -id 0 -primary-gid 0	Create a unix user called root
# vserver name-mapping create -vserver vserver1 -direction win-unix -position 1 -pattern	.+	-replacement root	Create a name mapping from windows to unix
# vserver name-mapping create -vserver vserver1 -direction unix-win -position 1 -pattern	.+	-replacement sysadmin011	Create a name mapping from unix to windows
# vserver name-mapping show	Show name-mappings

SMB
|# vserver cifs options modify -vserver -smb2-enabled true | Enable SMB2.0 and 2.1 |

ROUTING GROUPS
# network interface show-routing-group	show routing groups for all vservers
# network routing-groups show -vserver vserver1	show routing groups for vserver1
# network routing-groups route create -vserver vserver1 -routing-group 10.1.1.0/24 -destination 0.0.0.0/0 -gateway 10.1.1.1	Creates a default route on vserver1
# ping -lif-owner vserver1 -lif data1 -destination www.google.com	ping www.google.com via vserver1 using the data1 port

DNS
|# services dns show | show DNS |

NIS
# vserver services nis-domain create -vserver vserver1 -domain vmlab.local -active true -servers 10.10.10.1	Create nis-domain called vmlab.local pointing to 10.10.10.1
# vserver modify -vserver vserver1 -ns-switch nis-file	Name Service Switch referencing a file
# vserver services nis-domain show	

Gestion du temps
NTP
# system services ntp server create -node -server	Adds an NTP server to node_name
# system services ntp config modify -enabled true	Enable ntp
# system node date modify -timezone	Sets timezone for Area/Location Timezone. i.e. Australia/Sydney
# node date show	Show date on all nodes
Date
# timezone -timezone Australia/Sydney	Sets the timezone for Sydney. Type ? after -timezone for a list
# date 202211010830	Sets date for yyyymmddhhmm
# date -node	Displays the date and time for the node

CONVERGED NETWORK ADAPTERS | FAS 8000 |
|# ucadmin show -node NODENAME | Show CNA ports on specific node |
|# ucadmin -node NODENAME -adapter 0e -mode cna | Change adapter 0e from FC to CNA. NOTE: A reboot of the node is required |

PERFORMANCE
# show-periodic -object volume -instance volumename -node node1 -vserver vserver1 -counter total_ops	avg_latency	read_ops	read_latency	Show the specific counters for a volume
# statistics show-periodic 0object nfsv3 -instance vserver1 -counter nfsv3_ops	nfsv3_read_ops	nfsv3_write_ops	read_avg_latency	write_avg_latency	Shows the specific nfsv3 counters for a vserver
# sysstat -x 1	Shows counters for CPU, NFS, CIFS, FCP, WAFL

Documentation

https://arkit.co.in/netapp-cluster-mode-commands-cheat-sheet/

https://library.netapp.com/ecmdocs/ECMP1155684/html/GUID-89A9ACCA-501C-42DB-949B-B57B9AFBBB98.html

https://community.netapp.com/t5/ONTAP-Discussions/Data-ONTAP-Basic-Command-Please/m-p/59641/thread-id/13975?attachment-id=1682

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