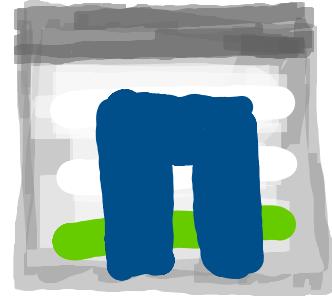
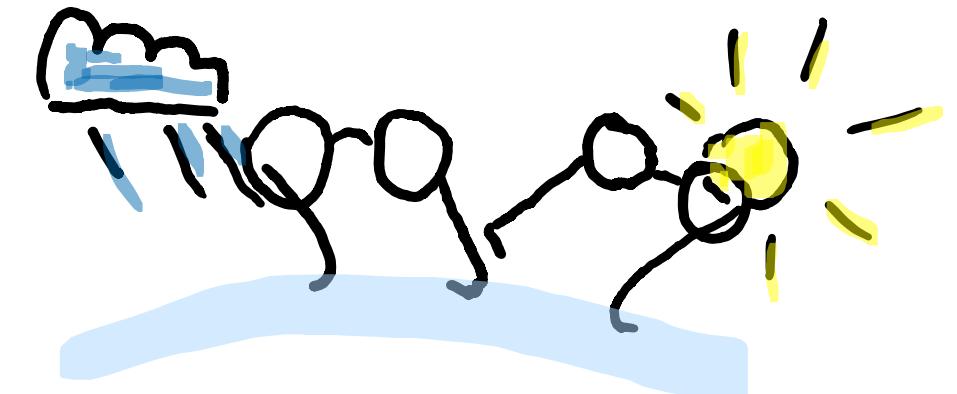


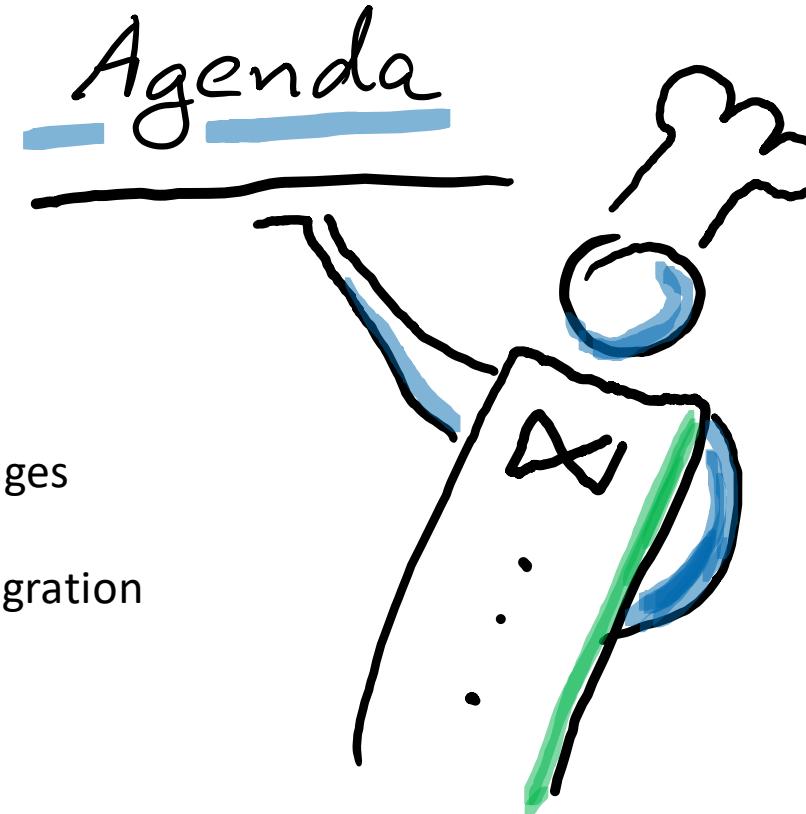
on



ANF Backup



Microsoft
Ralf Klahr
Azure Compute



- Agenda
- Backup Options
 - Backup Parameter
 - ANF Backup – Advantages
 - ANF Backup – Design
 - ANF Backup – SAP Integration
 - Data Backup
 - Log Backup

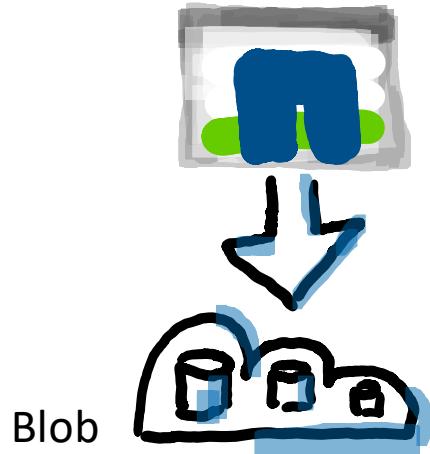
Backup - Options

Default NFS Backup



azacsnap
Azure Appl. Consist. Snapshot Tool

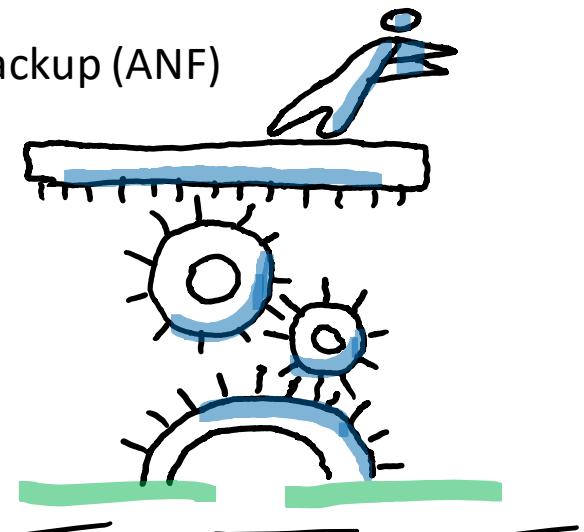
ANF Backup



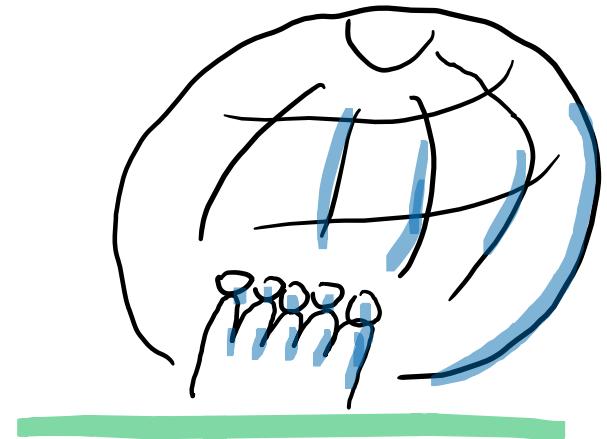
|

|

az backup (ANF)



Commvault IntelliSnap >=11.21



Backup Parameter

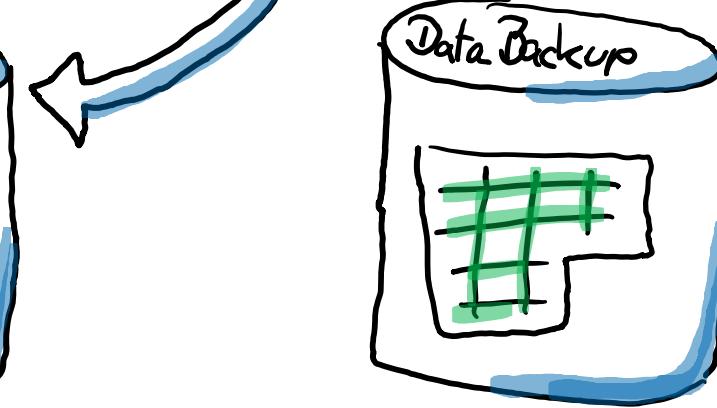
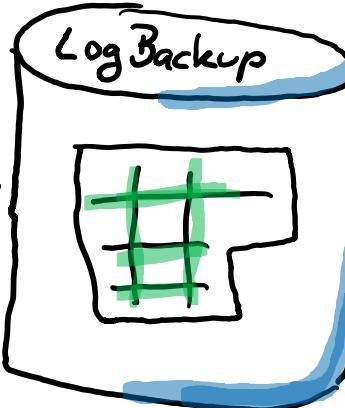
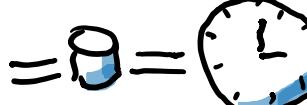
`$(DIR_INSTANCE) = /hana/shared/<SID>/HDB<ID>/backup/`

persistence	
basepath_catalogbackup	<code>\$(DIR_INSTANCE)/backup/log</code>
basepath_databackup	<code>\$(DIR_INSTANCE)/backup/data</code>
basepath_logbackup	<code>\$(DIR_INSTANCE)/backup/log</code>
basepath_rootkeybackup	<code>\$(DIR_INSTANCE)/backup/sec</code>

`log_backup_timeout_s`

900

300s



/hana/log/SID/mnt0001/
 → hdb0001 → SYSTEMDB
 → hdb0002 → TenantDB
 → hdb0003 → XS Engine

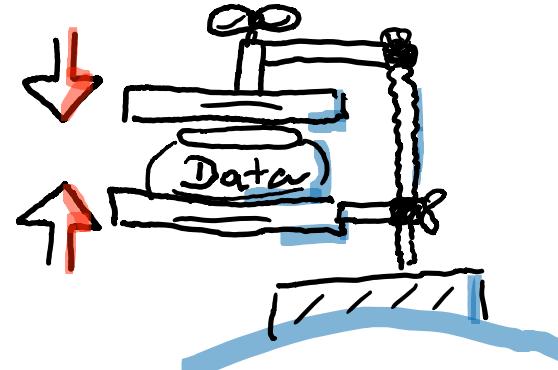
/hana/backup/SID/logbackup
 → SYSTEMDB
 → DB_SID

/hana/backup/SID/databackup
 → SYSTEMDB
 → DB_SID



ANF Backup - Advantages

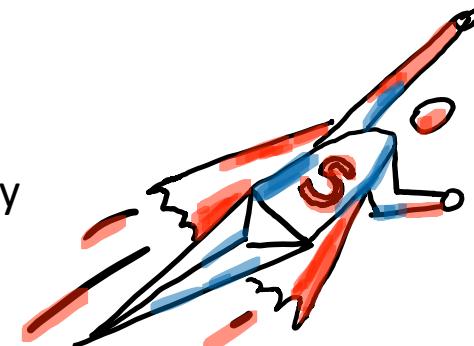
Inline Compression



Data De-Duplication



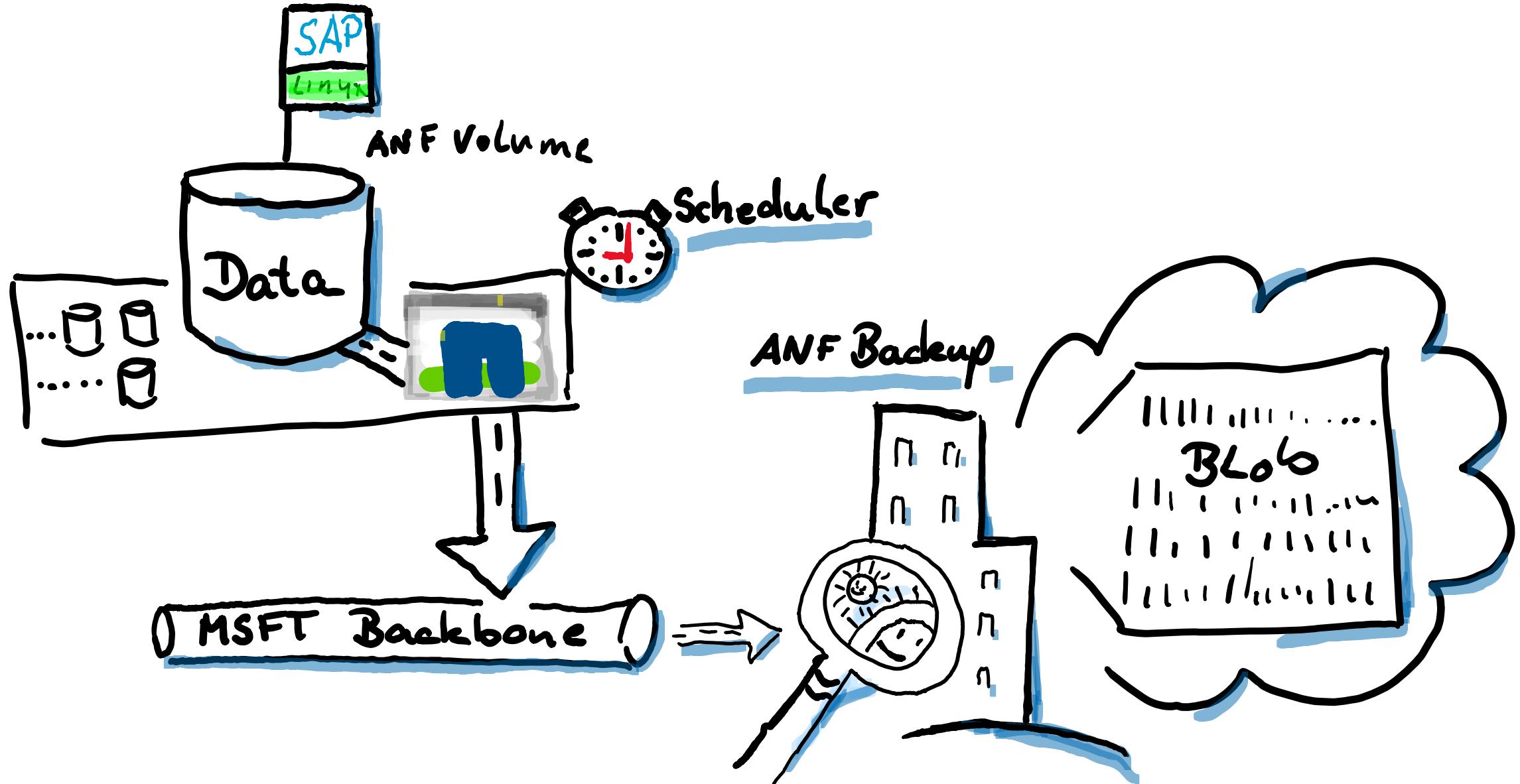
Only Block Level Delta Copy



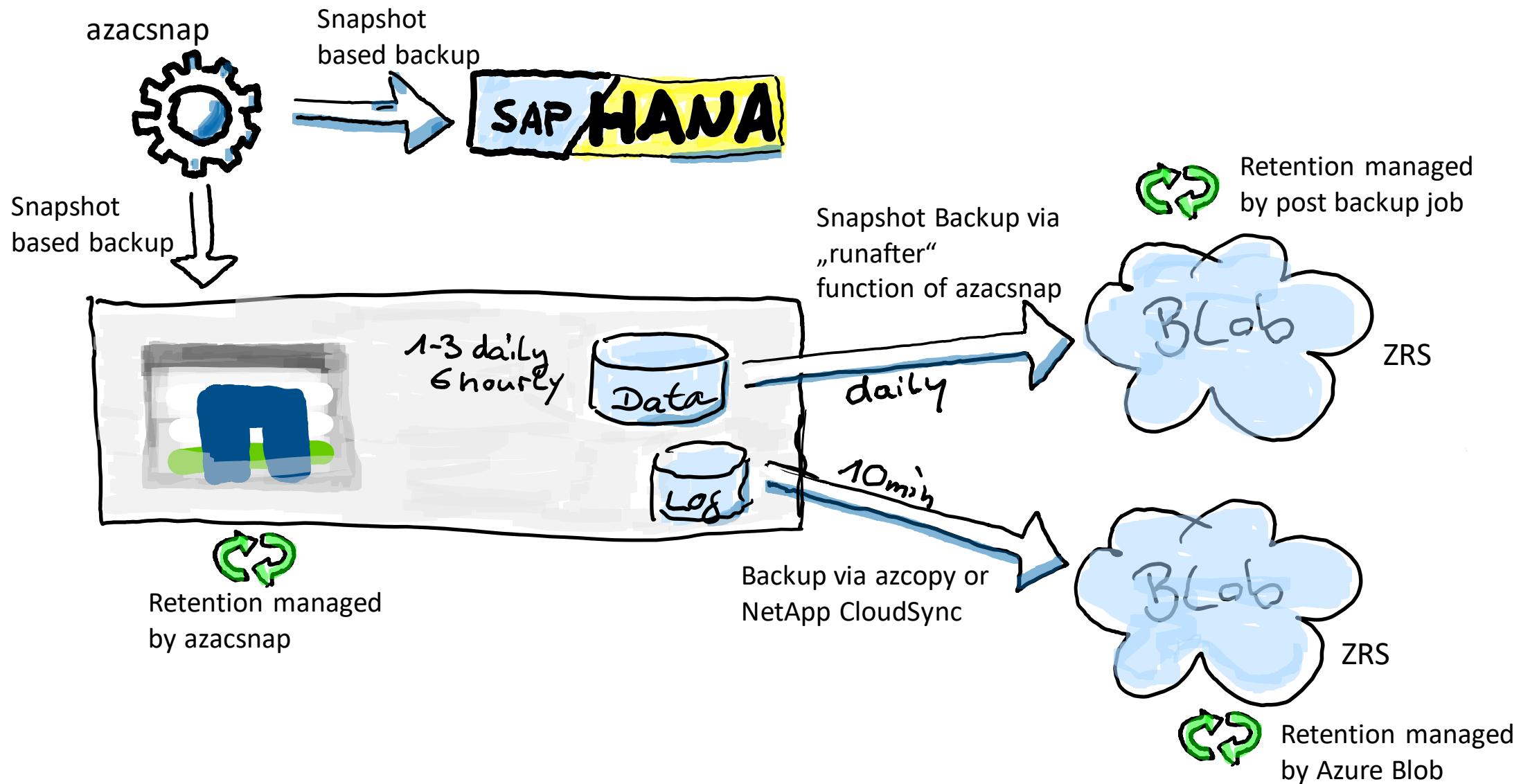
Backup decoupled from VM traffic

Backup has no IO quota reduction

ANF Backup - Design



ANF Backup – SAP Integration



ANF Backup – Data - SnapShot

Search < Add snapshot Refresh

Search snapshots

Name	Location	Created	...
daily_F38A967F016	East US	01/13/2023, 10:51:17 AM	...
daily_F3951B1D83E	East US	01/16/2023, 05:17:01 PM	...
daily_F3953212381_ralfanadata	East US	01/16/2023, 05:57:11 PM	...

Settings

Properties

Locks

Storage service

Mount instructions

Export policy

Snapshots

Replication

```

vi cron_backup_daily.sh
#!/bin/bash

BACKUP_PREFIX="daily"
PRIMARY_BACKUP_RETENTION=2
LOCATION="eastus"

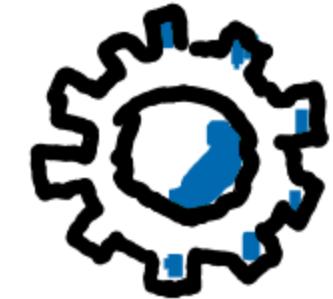
## AZACSNAP - PRIMARY BACKUP ##
HANA_CLIENT_PATH=`find /hana/shared/ -name hdbclient -type d -print 2>/dev/null`
export PATH=$PATH:$HANA_CLIENT_PATH

echo "Executing primary backup with prefix $BACKUP_PREFIX (retention ${PRIMARY_BACKUP_RETENTION})."
bin/azacsnap -c backup --volume data --prefix daily --retention 2 --trim -v --runafter 'env;
./anfBackup.sh $azPrefix $azRetention $azSnapshotName $azConfigFileName' %120

```



azacsnap





ANF Backup – Log Backup

ralfstorageaccount | Storage browser

Storage account

Search Overview Activity log Tags Diagnose and solve problems Access Control (IAM) Data migration Events Storage browser Data storage Containers

Add Directory Upload Refresh Delete Copy Paste Rename Acquire lease Break lease Edit columns

Blob containers > ralfanalogbackup > log

Authentication method: Access key (Switch to Azure AD User Account)

Search blobs by prefix (case-sensitive) Only show active blobs

Showing all 2 items

Name	Last modified	Access tier	Blob type	Size	Lease state
[..]					...
DB_ANA					...
SYSTEMDB					...

vi logbackup.sh

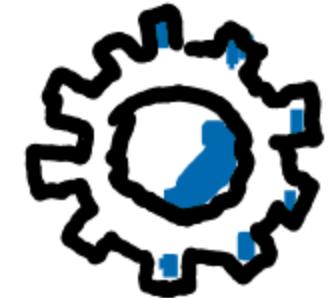
```
#!/bin/bash
DATE=`date +\%m-\%d-\%Y`
# The SID of the Database
SID=ANA
#This Folder/Directory will be backed up to the Azure Blob Container
BACKUPFOLDER=/hana/backup/"${SID}"/log
# The SAS Access Key
CONTAINER_SAS_KEY="https://ralfstorageaccount.blob.core.windows.net/ralfanalogbackup?sp=racwdl&st=2023-01-16T14:11:17Z&se=2024-01-16T22:11:17Z&spr=https&sv=2021-06-08&sr=c&sig=xz*****ks%3D"
#The Logfile
LOGFILE="/tmp/LogBackup_${SID}.log"
# MAX LOGFILE SIZE is 2 MB
MAXSIZE=200000
# Get file size
FILESIZE=$(stat -c%s "$LOGFILE")
....
```



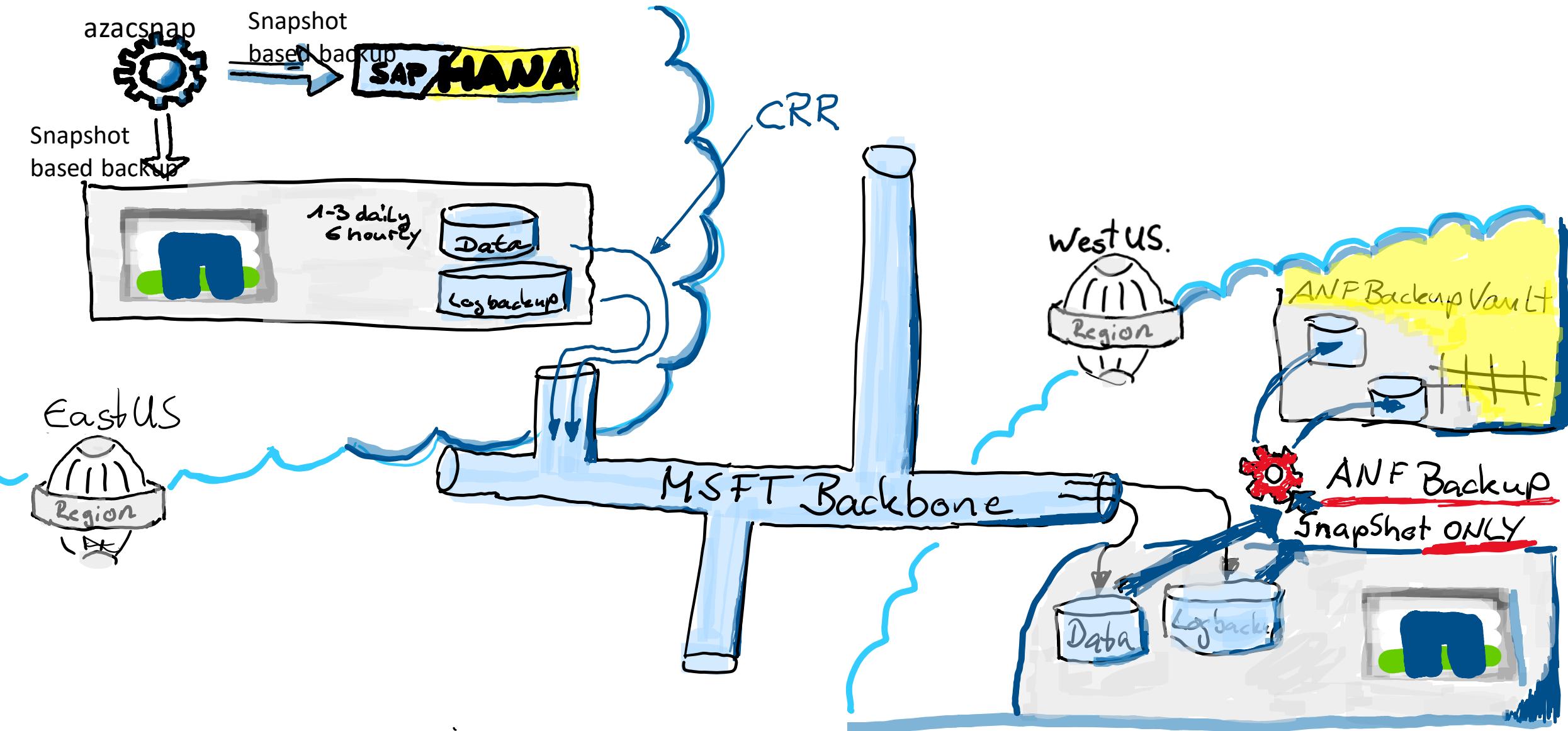
crontab -e

```
# create daily backups twice a day and replicate them via ANF backup
0 2,14 * * *          /home/azacsnap/bin/cron_backup_daily.sh
# create a log backup to the blob container every 5 minutes
*/5 * * * *         /home/azacsnap/bin/logbackup.sh
```

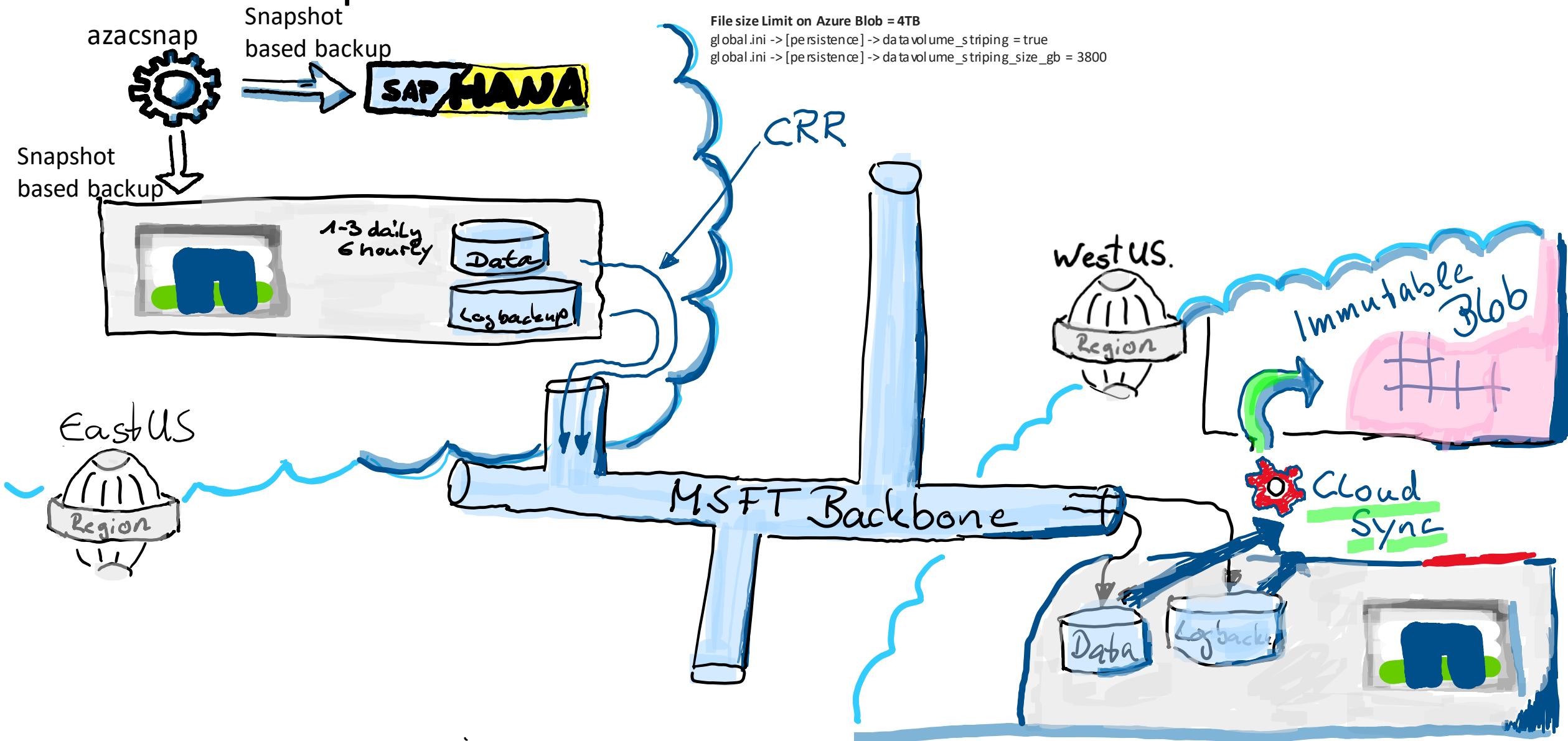
azacsnap

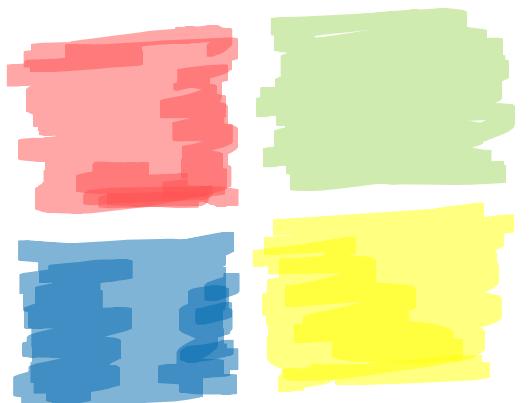


ANF Backup – With DR



ANF Backup – With DR - Immutable





Thank You

