



Istituto Nazionale di Fisica Nucleare

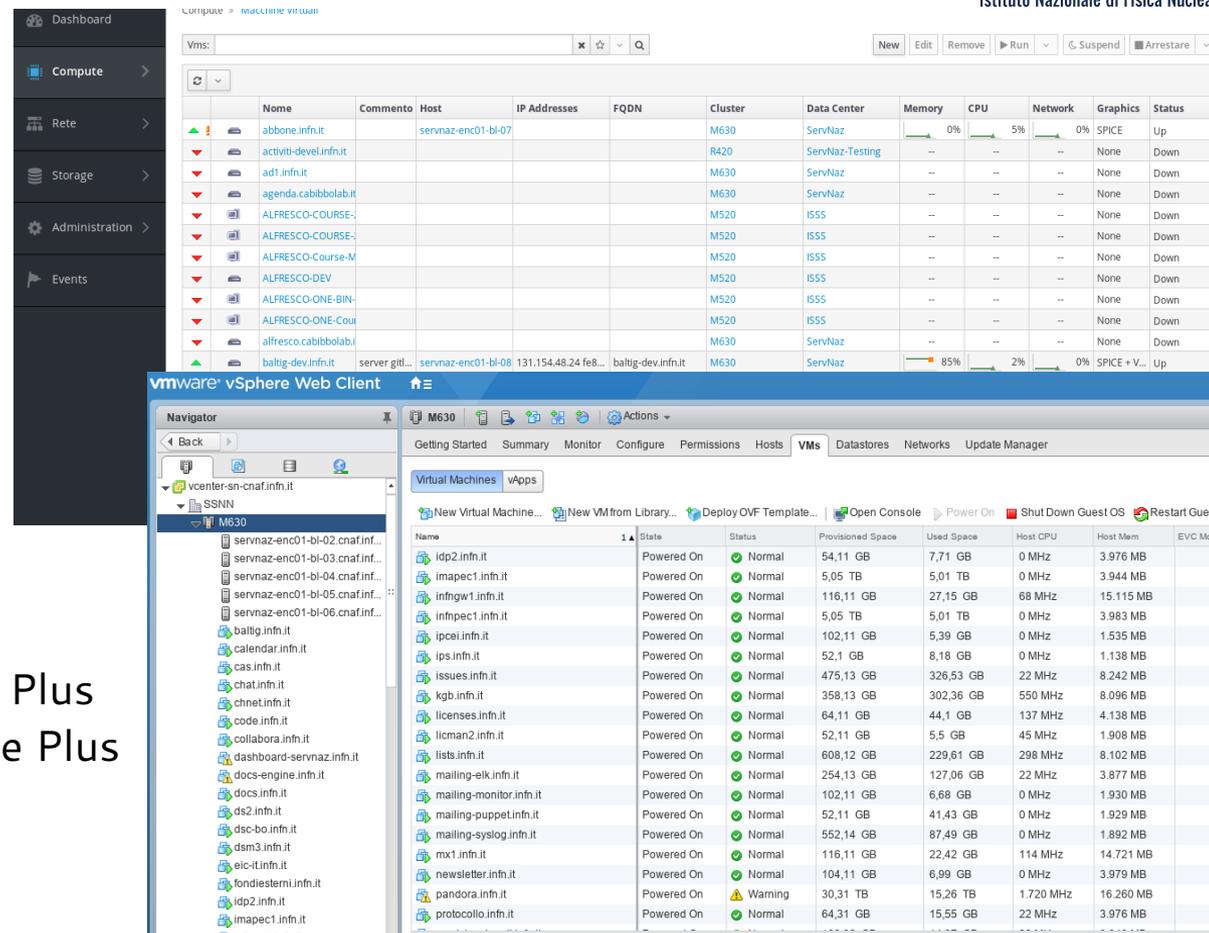
SSNN: implementazione del DR

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Infrastrutture

2 infrastrutture oVirt

- CNAF: 4 data centers
 - 1) ISSS: 10 M520
 - 2) Servnaz: 4 M630
 - 3) Servnaz sviluppo: 7 R420
 - 4) Virtual Desktop: 4 M420
- Presidenza (G.Peco): 1 data center, 3 host/HV



The screenshot shows the VMware vSphere Web Client interface. The top part displays a list of virtual machines (VMs) with columns for Name, Commento, Host, IP Addresses, FQDN, Cluster, Data Center, Memory, CPU, Network, Graphics, and Status. Below this, the 'Virtual Machines' tab is active, showing a detailed list of VMs with columns for Name, State, Status, Provisioned Space, Used Space, Host CPU, Host Mem, and EVC Cap.

Name	State	Status	Provisioned Space	Used Space	Host CPU	Host Mem	EVC Cap
idp2.inf.it	Powered On	Normal	54,11 GB	7,71 GB	0 MHz	3.976 MB	
imapect1.inf.it	Powered On	Normal	5,05 TB	5,01 TB	0 MHz	3.944 MB	
infngw1.inf.it	Powered On	Normal	116,11 GB	27,15 GB	68 MHz	15.115 MB	
infspc1.inf.it	Powered On	Normal	5,05 TB	5,01 TB	0 MHz	3.983 MB	
ipcel.inf.it	Powered On	Normal	102,11 GB	5,39 GB	0 MHz	1.535 MB	
ips.inf.it	Powered On	Normal	52,1 GB	8,18 GB	0 MHz	1.138 MB	
issues.inf.it	Powered On	Normal	475,13 GB	326,53 GB	22 MHz	8.242 MB	
kgb.inf.it	Powered On	Normal	358,13 GB	302,36 GB	550 MHz	8.096 MB	
licenses.inf.it	Powered On	Normal	64,11 GB	44,1 GB	137 MHz	4.138 MB	
licman2.inf.it	Powered On	Normal	52,11 GB	5,5 GB	45 MHz	1.908 MB	
lists.inf.it	Powered On	Normal	608,12 GB	229,61 GB	298 MHz	8.102 MB	
mailing-elk.inf.it	Powered On	Normal	254,13 GB	127,06 GB	22 MHz	3.877 MB	
mailing-monitor.inf.it	Powered On	Normal	102,11 GB	6,68 GB	0 MHz	1.930 MB	
mailing-puppet.inf.it	Powered On	Normal	52,11 GB	41,43 GB	0 MHz	1.929 MB	
mailing-syslog.inf.it	Powered On	Normal	552,14 GB	87,49 GB	0 MHz	1.892 MB	
mx1.inf.it	Powered On	Normal	116,11 GB	22,42 GB	114 MHz	14.721 MB	
newsletter.inf.it	Powered On	Normal	104,11 GB	6,99 GB	0 MHz	3.979 MB	
pandora.inf.it	Powered On	Warning	30,31 TB	15,26 TB	1.720 MHz	16.260 MB	
protocollo.inf.it	Powered On	Normal	64,31 GB	15,55 GB	22 MHz	3.976 MB	

2 infrastrutture VMware

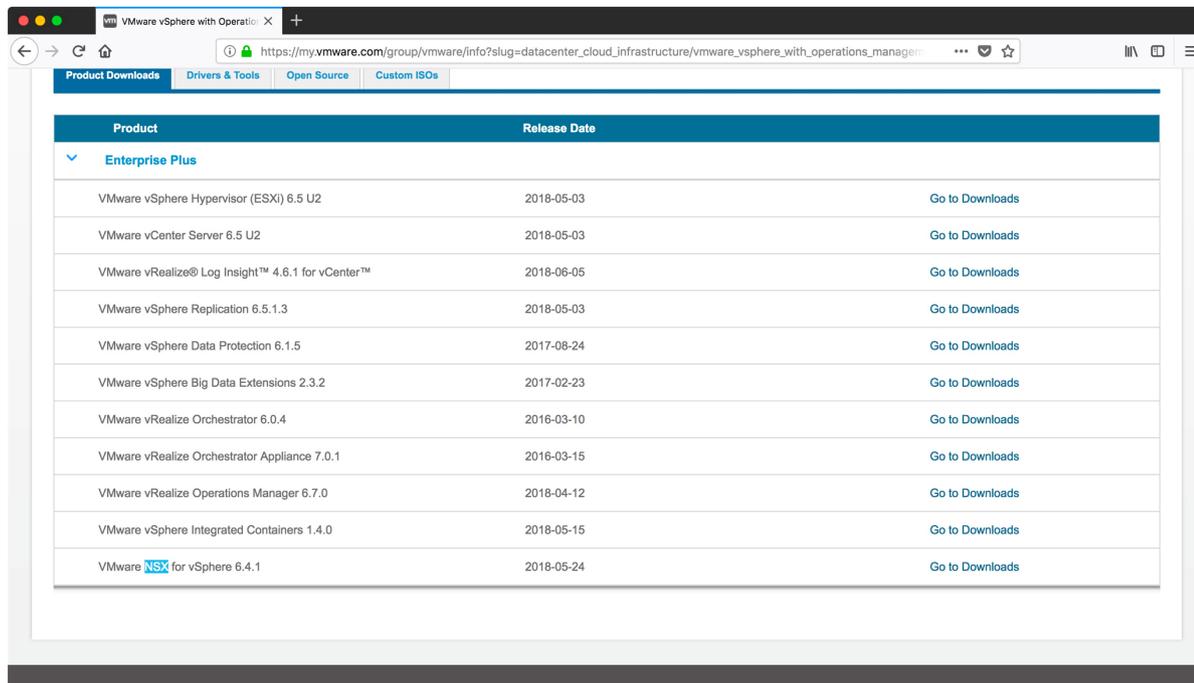
- 1 data center, 4 M630, licenza Essential Plus
- 1 data center, 3 M630, licenza Enterprise Plus
- 6 with operation management

Implementazione DR

I servizi SSNN (*.infn.it) presenti precedentemente sull'infrastruttura oVirt sono stati migrati sulle infrastrutture VMware

La licenza Enterprise with operation management offre diverse "feature"

Una di queste è "vSphere replication" cioè la replica della VM con RPO (Recovery Point Objective) configurabile

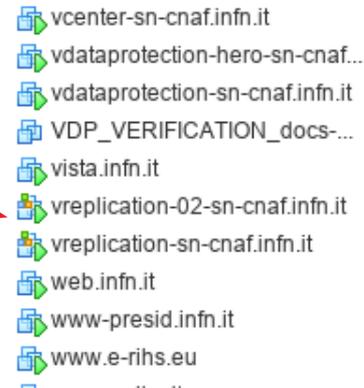


The screenshot shows the VMware vSphere Product Downloads page. The page is titled "Product Downloads" and lists various VMware products under the "Enterprise Plus" category. The table below summarizes the products and their release dates.

Product	Release Date	Action
VMware vSphere Hypervisor (ESXi) 6.5 U2	2018-05-03	Go to Downloads
VMware vCenter Server 6.5 U2	2018-05-03	Go to Downloads
VMware vRealize® Log Insight™ 4.6.1 for vCenter™	2018-06-05	Go to Downloads
VMware vSphere Replication 6.5.1.3	2018-05-03	Go to Downloads
VMware vSphere Data Protection 6.1.5	2017-08-24	Go to Downloads
VMware vSphere Big Data Extensions 2.3.2	2017-02-23	Go to Downloads
VMware vRealize Orchestrator 6.0.4	2016-03-10	Go to Downloads
VMware vRealize Orchestrator Appliance 7.0.1	2016-03-15	Go to Downloads
VMware vRealize Operations Manager 6.7.0	2018-04-12	Go to Downloads
VMware vSphere Integrated Containers 1.4.0	2018-05-15	Go to Downloads
VMware NSX for vSphere 6.4.1	2018-05-24	Go to Downloads

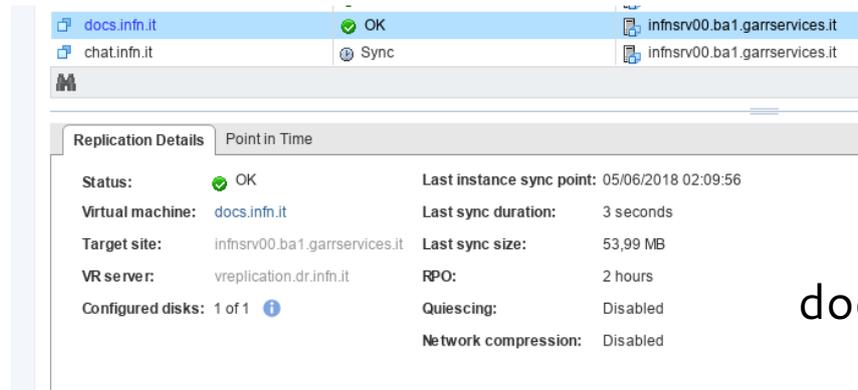
Implementazione DR – vSphere replication [1]

La feature “data replication” e’ eseguita da un appliance (VM) in funzione sul cluster VMware



Il sito sorgente e’ il cluster VMware installato al CNAF e quello di destinazione e’ il sito presso Bari <https://infnsrv00.ba1.garrservices.it>

Per ogni VM “replicata” sul sito di destinazione, si puo’ scegliere un RPO (intervallo di tempo). vSphere replication applica i cambiamenti di una VM del sito sorgente alla VM del sito destinazione in modo che le repliche non siano piu’ “vecchie” del RPO.



A screenshot of the vSphere replication details for a VM named 'docs.infn.it'. The interface shows the source site as 'docs.infn.it' and the target site as 'infnsrv00.ba1.garrservices.it'. The replication status is 'OK'. The RPO is set to 2 hours. Other details include the last sync point, duration, and size.

Replication Details	Point in Time
Status: ✔ OK	Last instance sync point: 05/06/2018 02:09:56
Virtual machine: docs.infn.it	Last sync duration: 3 seconds
Target site: infnsrv00.ba1.garrservices.it	Last sync size: 53,99 MB
VR server: vreplication.dr.infn.it	RPO: 2 hours
Configured disks: 1 of 1	Quiescing: Disabled
	Network compression: Disabled

RPO 4h

RPO
documentale 2h

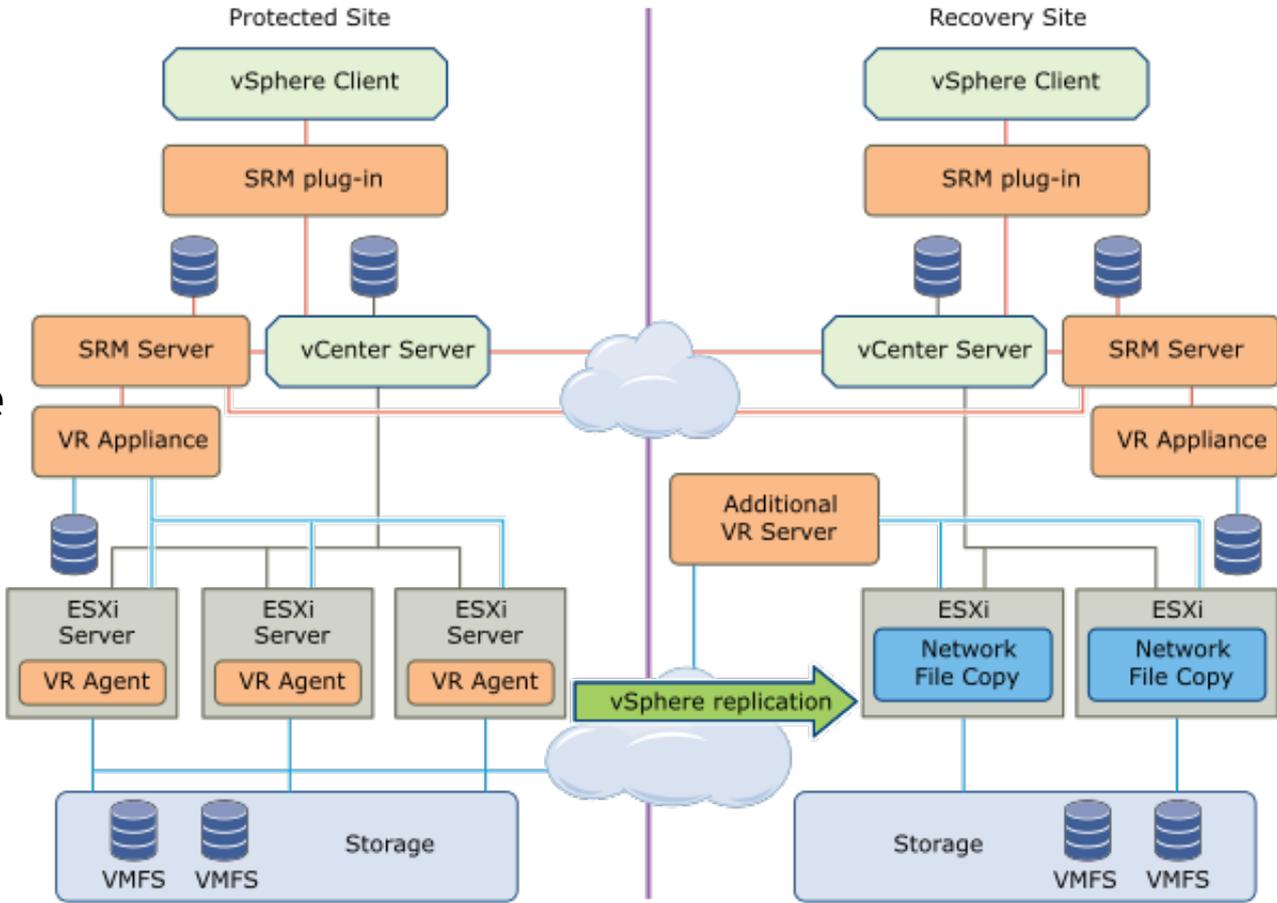
Implementazione DR – vSphere replication [2]

CNAF

GARR-Bari

2 appliance (VM) che gestiscono le repliche

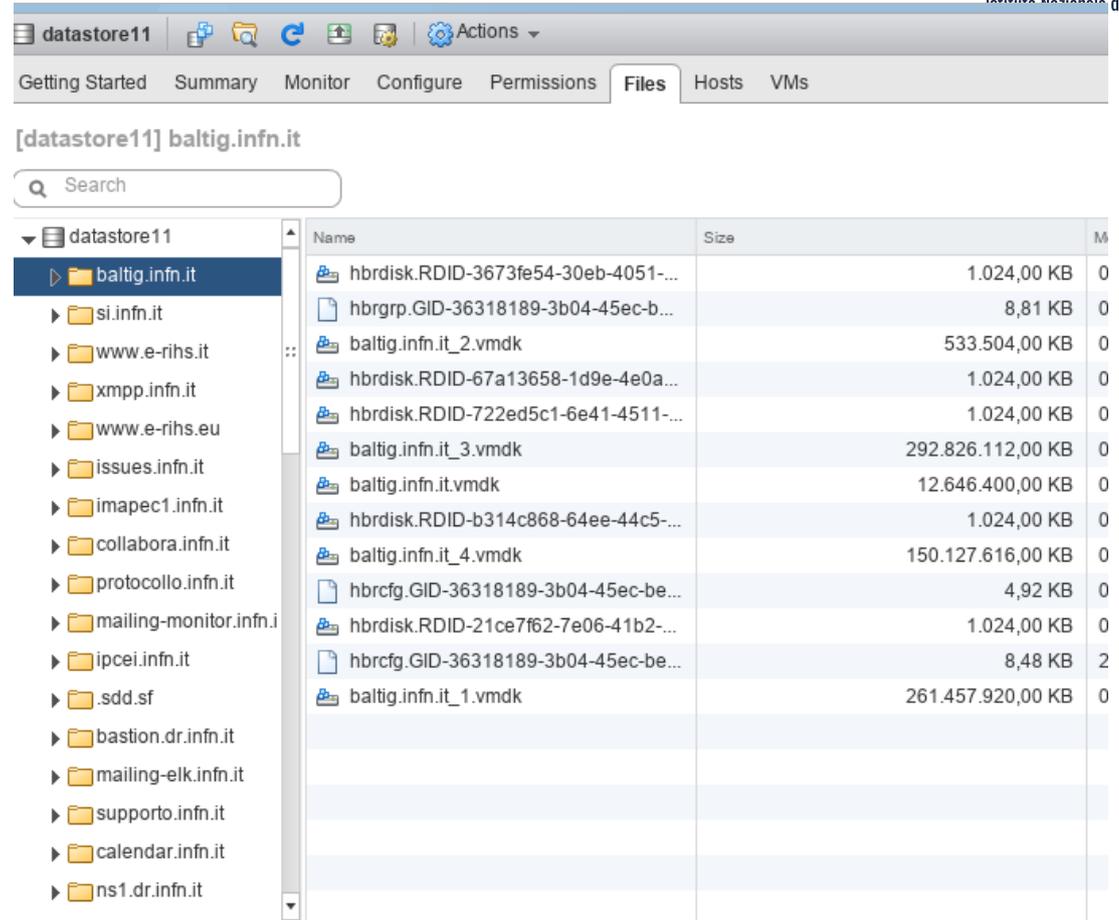
2 appliance (VM) che gestiscono le repliche



Non c'è la VM ma i "delta" utili per la ricostruzione

Implementazione DR – vSphere replication [3]

File presenti sul datastore remoto
relativi alla replica di una VM



The screenshot shows the vSphere File System view for a remote datastore named 'datastore11'. The left pane displays a directory tree with 'baltig.infn.it' selected. The right pane shows a list of files and folders with columns for Name, Size, and M (Mount).

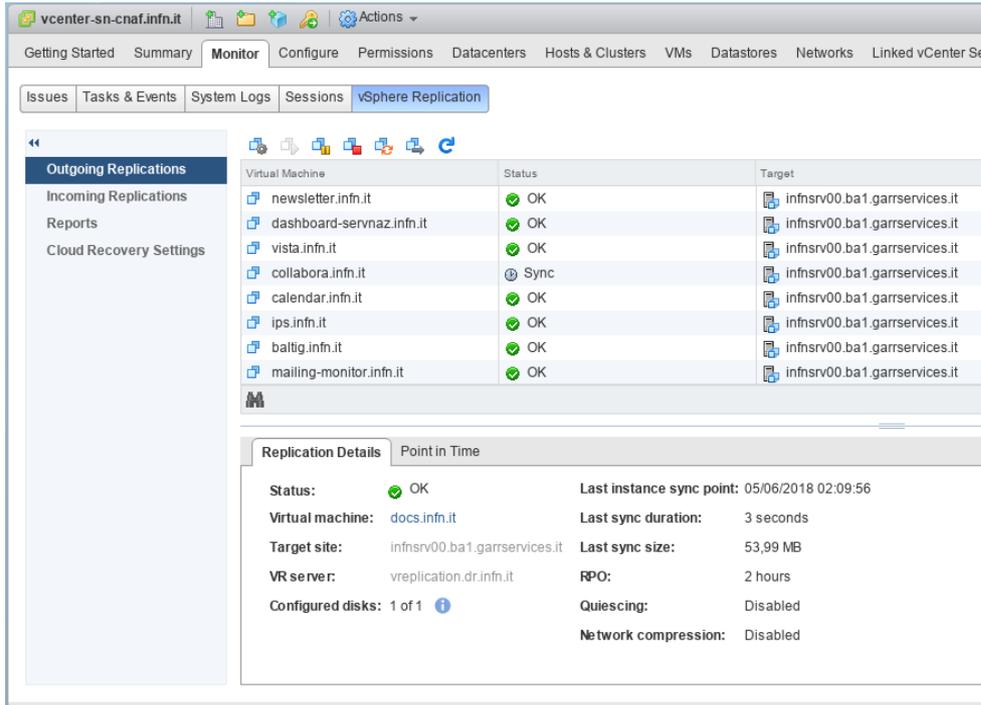
Name	Size	M
hbrdisk.RDID-3673fe54-30eb-4051-...	1.024,00 KB	0
hbrgrp.GID-36318189-3b04-45ec-b...	8,81 KB	0
baltig.infn.it_2.vmdk	533.504,00 KB	0
hbrdisk.RDID-67a13658-1d9e-4e0a...	1.024,00 KB	0
hbrdisk.RDID-722ed5c1-6e41-4511-...	1.024,00 KB	0
baltig.infn.it_3.vmdk	292.826.112,00 KB	0
baltig.infn.it.vmdk	12.646.400,00 KB	0
hbrdisk.RDID-b314c868-64ee-44c5-...	1.024,00 KB	0
baltig.infn.it_4.vmdk	150.127.616,00 KB	0
hbrcfg.GID-36318189-3b04-45ec-be...	4,92 KB	0
hbrdisk.RDID-21ce7f62-7e06-41b2-...	1.024,00 KB	0
hbrcfg.GID-36318189-3b04-45ec-be...	8,48 KB	2
baltig.infn.it_1.vmdk	261.457.920,00 KB	0

Implementazione DR – vSphere replication [4]

CNAF – outgoing site



GARR-Bari – incoming site

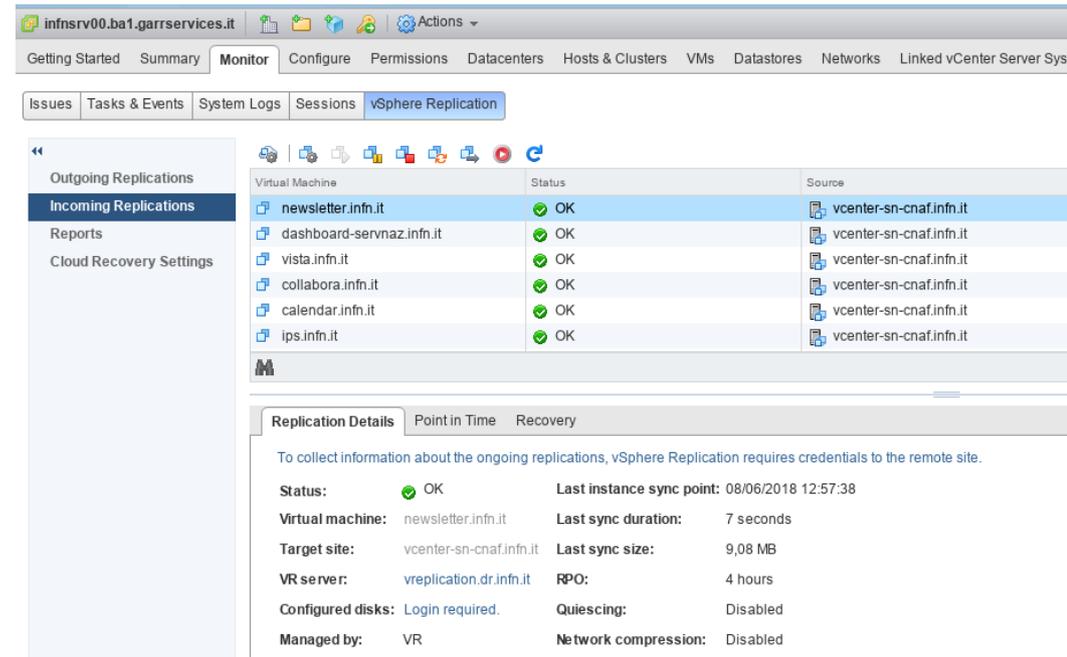


Virtual Machine

Virtual Machine	Status	Target
newsletter.infn.it	OK	infnsvr00.ba1.garrservices.it
dashboard-servnaz.infn.it	OK	infnsvr00.ba1.garrservices.it
vista.infn.it	OK	infnsvr00.ba1.garrservices.it
collabora.infn.it	Sync	infnsvr00.ba1.garrservices.it
calendar.infn.it	OK	infnsvr00.ba1.garrservices.it
ips.infn.it	OK	infnsvr00.ba1.garrservices.it
baltig.infn.it	OK	infnsvr00.ba1.garrservices.it
mailing-monitor.infn.it	OK	infnsvr00.ba1.garrservices.it

Replication Details

Status:	OK	Last instance sync point:	05/06/2018 02:09:56
Virtual machine:	docs.infn.it	Last sync duration:	3 seconds
Target site:	infnsvr00.ba1.garrservices.it	Last sync size:	53,99 MB
VR server:	vreplication.dr.infn.it	RPO:	2 hours
Configured disks:	1 of 1	Quiescing:	Disabled
		Network compression:	Disabled



Virtual Machine

Virtual Machine	Status	Source
newsletter.infn.it	OK	vcenter-sn-cnaf.infn.it
dashboard-servnaz.infn.it	OK	vcenter-sn-cnaf.infn.it
vista.infn.it	OK	vcenter-sn-cnaf.infn.it
collabora.infn.it	OK	vcenter-sn-cnaf.infn.it
calendar.infn.it	OK	vcenter-sn-cnaf.infn.it
ips.infn.it	OK	vcenter-sn-cnaf.infn.it

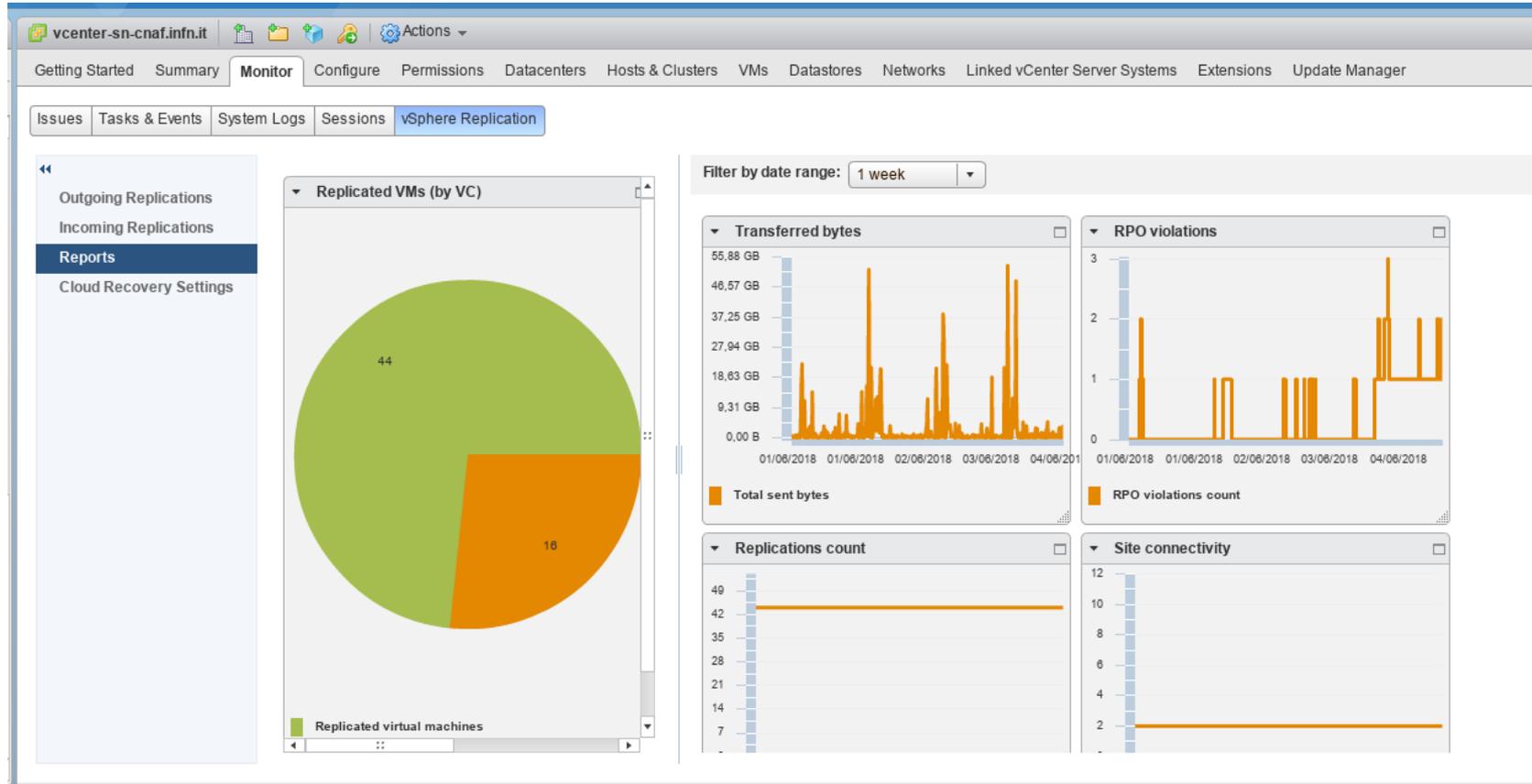
Replication Details

Status:	OK	Last instance sync point:	08/06/2018 12:57:38
Virtual machine:	newsletter.infn.it	Last sync duration:	7 seconds
Target site:	vcenter-sn-cnaf.infn.it	Last sync size:	9,08 MB
VR server:	vreplication.dr.infn.it	RPO:	4 hours
Configured disks:	Login required.	Quiescing:	Disabled
Managed by:	VR	Network compression:	Disabled

Qui si hanno informazioni sui tempi/stato della replica

Implementazione DR – vSphere replication [5]

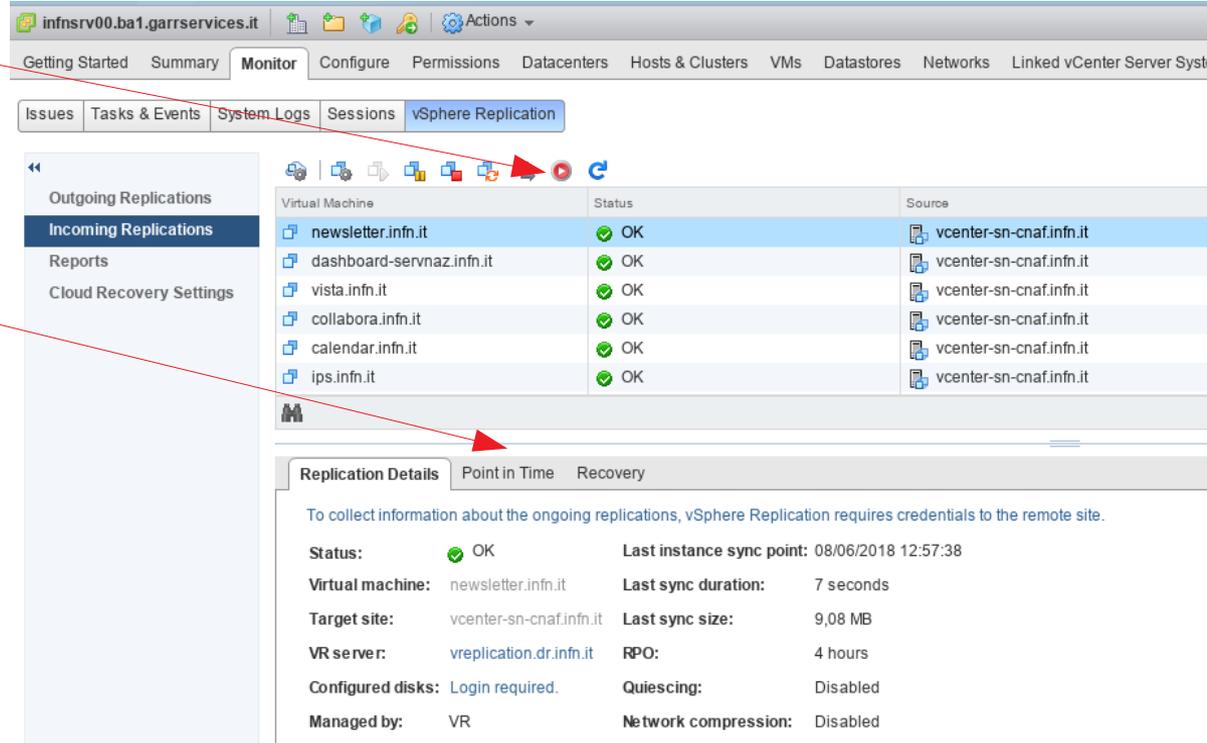
vSphere replication reports



Implementazione DR – vSphere replication [6]

Il recovery/ripristino della VM avviene sul sito di destinazione

Un'ulteriore opzione, da abilitare, del data replication e' il point in time; in questo caso, in aggiunta all'ultima replica ci sono anche "n" stati precedenti rendendo possibile il ripristino ad uno di questi



The screenshot shows the vSphere Replication interface. The left sidebar has a navigation menu with 'Incoming Replications' selected. The main area displays a table of VMs and their replication status.

Virtual Machine	Status	Source
newsletter.infn.it	OK	vcenter-sn-cnaf.infn.it
dashboard-servnaz.infn.it	OK	vcenter-sn-cnaf.infn.it
vista.infn.it	OK	vcenter-sn-cnaf.infn.it
collabora.infn.it	OK	vcenter-sn-cnaf.infn.it
calendar.infn.it	OK	vcenter-sn-cnaf.infn.it
ips.infn.it	OK	vcenter-sn-cnaf.infn.it

Below the table, the 'Replication Details' for the selected VM are shown:

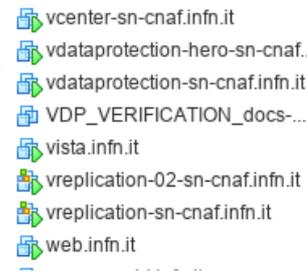
Replication Details | Point in Time | Recovery

To collect information about the ongoing replications, vSphere Replication requires credentials to the remote site.

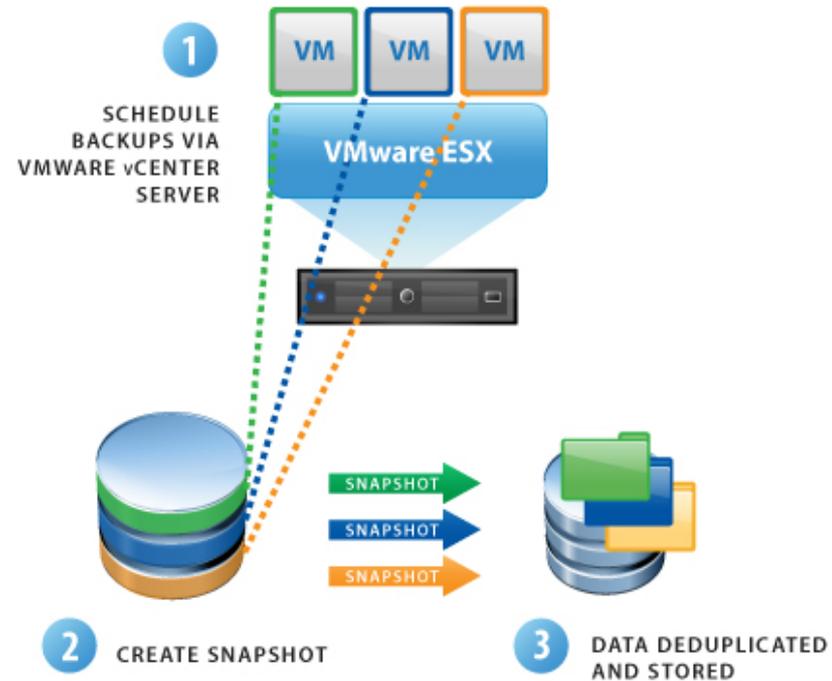
Status:	OK	Last instance sync point:	08/06/2018 12:57:38
Virtual machine:	newsletter.infn.it	Last sync duration:	7 seconds
Target site:	vcenter-sn-cnaf.infn.it	Last sync size:	9,08 MB
VR server:	vreplication.dr.infn.it	RPO:	4 hours
Configured disks:	Login required.	Quiescing:	Disabled
Managed by:	VR	Network compression:	Disabled

Implementazione DR – vSphere data protection [1]

La feature “data protection” e’ eseguita da un appliance (VM) in funzione sul cluster VMware



- 1) il backup parte secondo schedula
- 2) l’appliance crea uno snapshot della VM
- 3) lo snapshot viene scritto sullo storage di destinazione e deduplicato



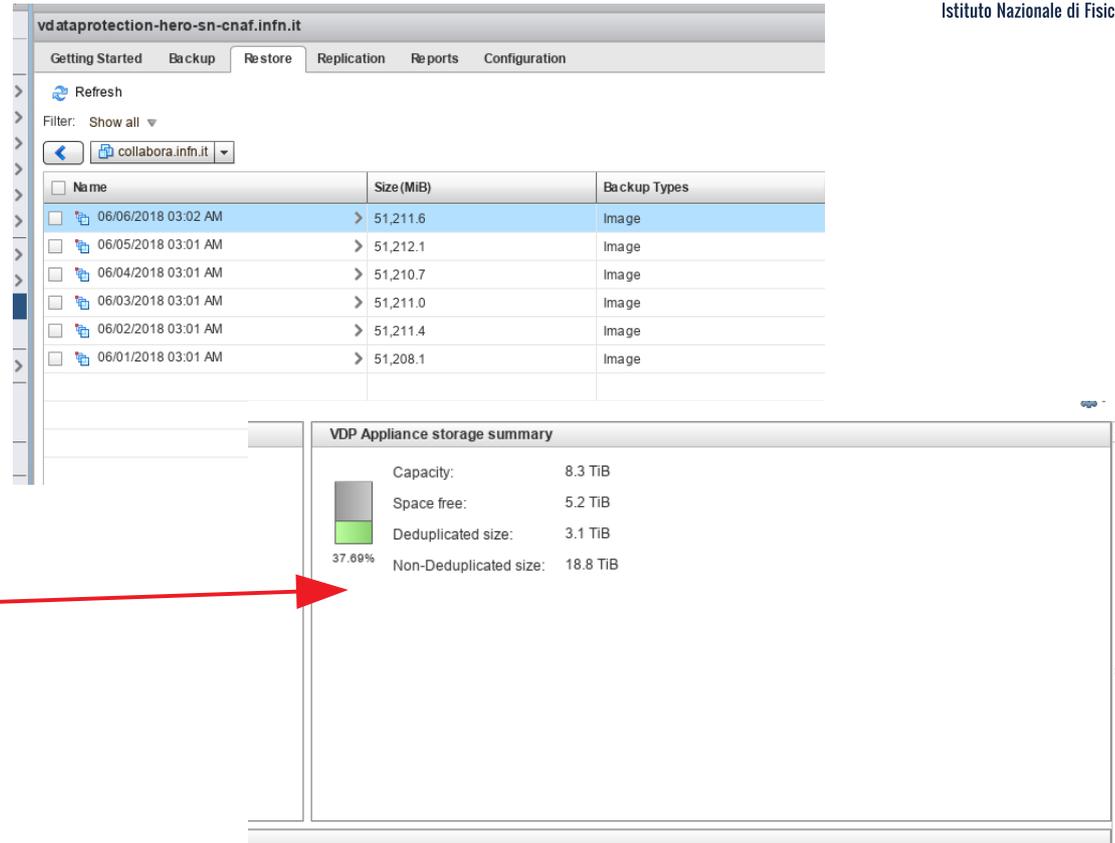
Implementazione DR – vSphere data protection [2]

Backup dell'immagine della VM, anche della configurazione, schedato verso due datastore esterni a quello dell'infrastruttura

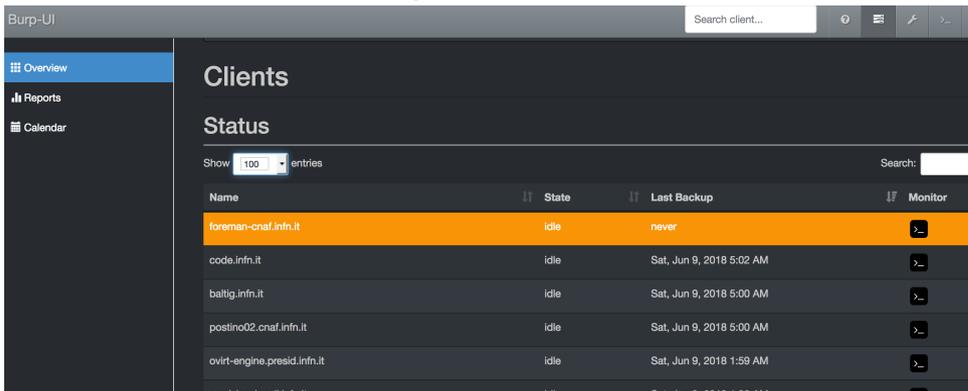
Possibilita' di schedare backup per singola VM, gruppi o tutto un datacenter.

Effetto della deduplica sui dati in backup

Controllo dei backup automatizzato; la VM viene ripristinata (senza configurazione di rete), si controlla che finisca il ripristino e cancellata; attivo per buona parte delle VM.



Note a margine – backup DATI su storage locale [1]



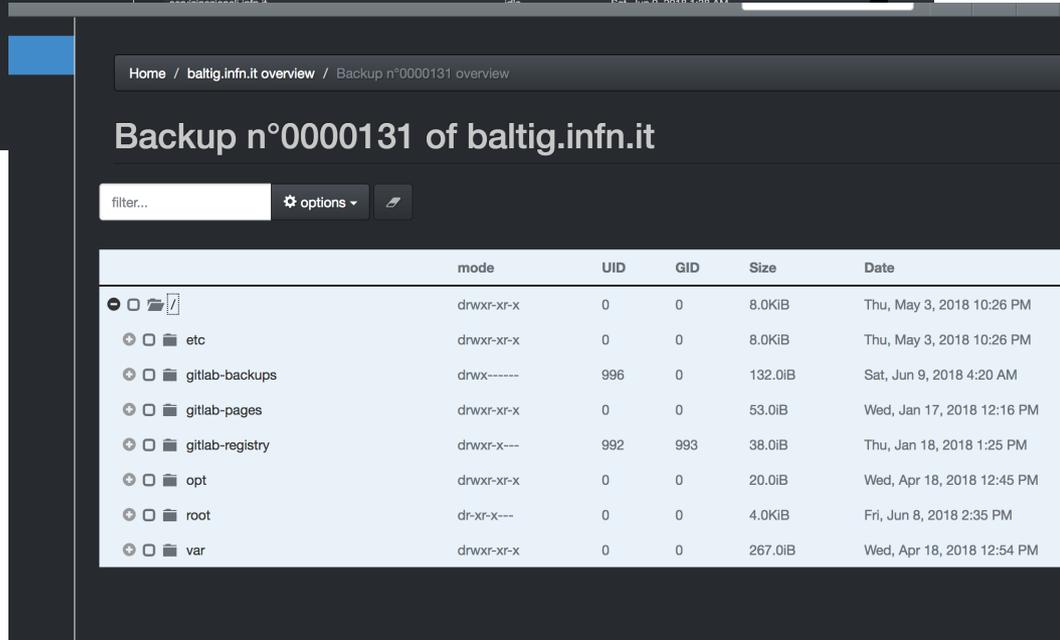
Search client...

Clients

Status

Show 100 entries

Name	State	Last Backup	Monitor
foreman-cnaf.infn.it	idle	never	✖
code.infn.it	idle	Sat, Jun 9, 2018 5:02 AM	✖
baltig.infn.it	idle	Sat, Jun 9, 2018 5:00 AM	✖
postino02.cnaf.infn.it	idle	Sat, Jun 9, 2018 5:00 AM	✖
ovirt-engine.presid.infn.it	idle	Sat, Jun 9, 2018 1:59 AM	✖

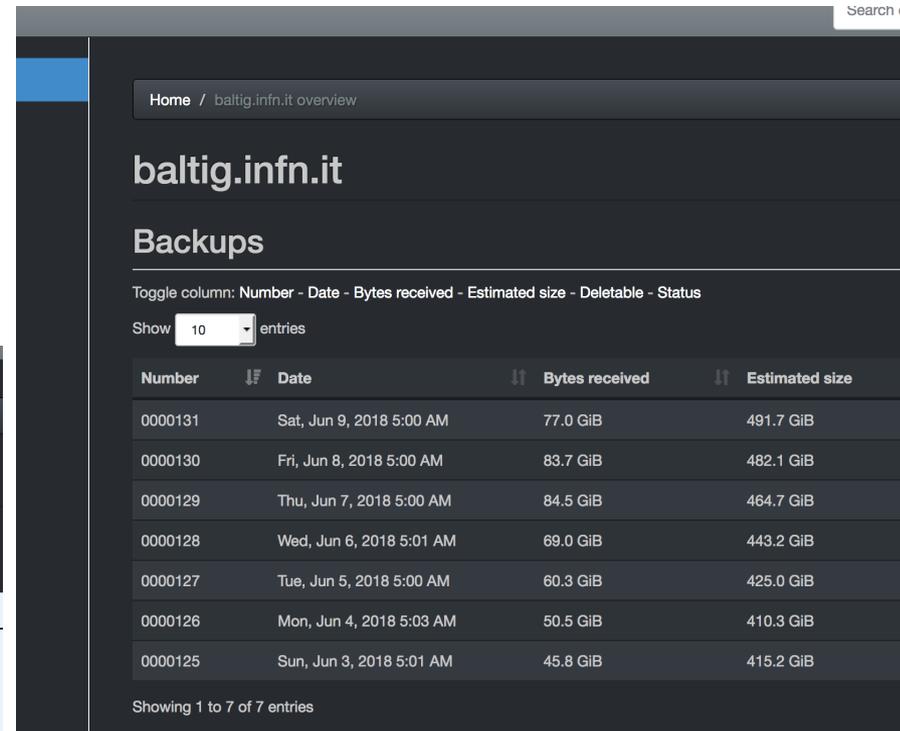


Home / baltig.infn.it overview / Backup n°0000131 overview

Backup n°0000131 of baltig.infn.it

filter... options

	mode	UID	GID	Size	Date
etc	drwxr-xr-x	0	0	8.0KiB	Thu, May 3, 2018 10:26 PM
gitlab-backups	drwx-----	996	0	132.0iB	Sat, Jun 9, 2018 4:20 AM
gitlab-pages	drwxr-xr-x	0	0	53.0iB	Wed, Jan 17, 2018 12:16 PM
gitlab-registry	drwxr-x---	992	993	38.0iB	Thu, Jan 18, 2018 1:25 PM
opt	drwxr-xr-x	0	0	20.0iB	Wed, Apr 18, 2018 12:45 PM
root	dr-xr-x---	0	0	4.0KiB	Fri, Jun 8, 2018 2:35 PM
var	drwxr-xr-x	0	0	267.0iB	Wed, Apr 18, 2018 12:54 PM



Home / baltig.infn.it overview

baltig.infn.it

Backups

Toggle column: Number - Date - Bytes received - Estimated size - Deletable - Status

Show 10 entries

Number	Date	Bytes received	Estimated size
0000131	Sat, Jun 9, 2018 5:00 AM	77.0 GiB	491.7 GiB
0000130	Fri, Jun 8, 2018 5:00 AM	83.7 GiB	482.1 GiB
0000129	Thu, Jun 7, 2018 5:00 AM	84.5 GiB	464.7 GiB
0000128	Wed, Jun 6, 2018 5:01 AM	69.0 GiB	443.2 GiB
0000127	Tue, Jun 5, 2018 5:00 AM	60.3 GiB	425.0 GiB
0000126	Mon, Jun 4, 2018 5:03 AM	50.5 GiB	410.3 GiB
0000125	Sun, Jun 3, 2018 5:01 AM	45.8 GiB	415.2 GiB

Showing 1 to 7 of 7 entries

I dati di tutti i servizi SSNN sono sotto backup su storage locale con Burp <https://burp.grke.org/>

Note a margine – backup DATI su TSM [2]

I dati di alcune VM SSNN sono sotto backup su nastro tramite client TSM/Tivoli IBM

Da valutare se ripristinare
il backup su nastro del data
storage di backup VMware

Subject Backup daily report - Servizi nazionali Jun 8, 2018 10:30:00 AM 10:3

 Custom Report
June 8, 2018 at 10:30 AM
This report includes 3 SQL queries

Scheduled backups in the last 24 hours

TSM-BACKUP

Node	Schedule time	Start time	End time	Status	Output
IMAP02	2018-06-08 05:00	2018-06-08 05:19	2018-06-08 05:49	Completed	All operations completed successfully.
LISTS	2018-06-08 05:00	2018-06-08 05:51	2018-06-08 06:22	Completed	The operation completed successfully, but some
POSTINO	2018-06-08 05:00	2018-06-08 05:34	2018-06-08 05:56	Completed	All operations completed successfully.
WEB	2018-06-08 00:01	2018-06-08 00:24	2018-06-08 00:36	Completed	All operations completed successfully.