CloudBerry Backup

Installation and Configuration Guide



CloudBerry Lab



Getting Started with CloudBerry Backup

CloudBerry Backup (CBB) solution was designed to facilitate PC and server data backup operations to multiple remote locations. It is integrated with top Cloud storage providers, allowing you to access each of your storage or start a sign up to a Cloud platform directly from CBB. It also works fine with network destinations like NAS (Network Attached Storage) or directly connected drives.

This document is the complete guide to the CloudBerry Backup deployment, configuration, and usage.

Product Editions & Licensing

The CBB can be downloaded directly from CloudBerry website with several editions.

- <u>Windows Desktop</u> (including FREE Edition) / <u>Server</u>.
- Microsoft SQL Server.
- Microsoft Exchange Server.
- Oracle Database.
- <u>Ultimate (former Enterprise)</u>.
- CloudBerry Backup for NAS (<u>QNAP</u> and <u>Synology</u>).

They differ in functionality, storage limits and individual solutions availability. We accomplished a chart with basic editions to give a clear perspective.

CBB Edition	Desktop Free	Desktop Pro	Server	MS SQL	MS Exchange	Ultimate
File-level Backup	+	+	+	+	+	+
Image	-	-	+	+	+	+





Based Backup						
MS SQL Server Backup	-	-	-	+	-	+
MS Exchange Server Backup	-	-	-	-	+	+
Encryption and Compressio n	-	-	+	+	+	+
Storage Limits (for one account)	200GB	1TB	1TB	1TB	1TB	Unlimited
Network Shares for Backup	1	1	5	5	5	Unlimited
Support Type	<u>Superuser.c</u> om forum Only	Email, 48 hours response				

On the download page, there are also links for Mac and Linux Editions. For Windows, CBB is distributed within Universal Installer so that you can choose the desired edition after the download.

The license of a CloudBerry Lab products is permanent and can be moved over, in case you recover the computer as a virtual machine (VM) or using the new hardware. There is also a volume discount – the more copies you buy, the cheaper they are. Estimated personal price is available on the <u>Cost</u> <u>Calculator page</u>.

CloudBerry Backup has free 15-days trial without limitations so that you can test any backup and recovery scenario before purchase. An upgrade to the advanced edition can be done just paying the difference and activating the new license in the GUI. Please find the <u>License Upgrade Wizard</u> on the separate page.

System Requirements

CloudBerry Backup is a cross-platform product, which follows the diversity of modern business IT-solutions. You can run CBB on:





- Windows Server 2003/ 2008/2008 R2/2012/2012 R2 (including Core option), Windows 7/8/10.
- Ubuntu 12/14; Suse 11/12; Red Hat 6.x/7.x; Fedora 12/21; CentOS 6/7; Oracle Linux 6.x/7.x.
- Mac OS 10.8 or newer.
- Synology or QNAP device with an Intel or ARM processor (for NAS editions respectively).

There are also special requirements for successful operation:

- Microsoft .NET Framework 4.0 (For Windows Edition).
- 1.4 GHz 64-bit processor.
- 512 MB RAM.
- 100 Mbps of network bandwidth (1Gbps is better).

To maintain a dedicated backup of Microsoft SQL Server and Exchange with CloudBerry Backup, you need to have such versions as:

- Microsoft SQL Server 2000/2003/2005/2008/2012/2014/2016 (including Express edition).
- Microsoft Exchange 2007/2010/2013.

Supported Cloud Services

CBB can backup data to 59 different cloud storage facilities, which are listed on <u>CloudBerry Lab</u> <u>Partners</u> page. All supported providers for the current license are available under **Add Account** tab of CBB **Main Menu**.

The most popular destinations are:

- Amazon S3.
- Amazon Glacier.
- Azure.
- Google Cloud.
- OpenStack.
- Rackspace.
- Backblaze B2.
- Oracle Cloud.
- ...and others.







Architecture

CloudBerry Lab uses the "one machine – one instance" principle of the backup system deployment, which means that every maintained computer needs an individual copy of CBB installed. Nevertheless, with Ultimate you can backup data from multiple computers using network paths such as \\PC1\share\.

All backups of the computer identified by the individual **Backup Prefix**. If you specify the old prefix on the new machine, CBB will access all previously saved data on the storage. One backup prefix can be assigned to several computers to create a shared storage. It's useful with user workstations, which have almost similar OS and software bundlings. Find out more on the **How to Recover Jobs and Presets on the New Server** section of this document.

Backup with CBB is highly customizable. You can use any number of cloud or local storage facilities simultaneously. Moreover, the data can be freely moved between a cloud or a local storage systems





using built-in Wizard. Even if the backups are transferred manually to another storage, CBB can recognize them by the backup prefix.

How to Install

Note: in this example, we use Windows Server 2012 as a platform. The process is quite the same on the other systems, so find out more on <u>Mac</u> and <u>Linux</u> download pages.

- 1. Get the universal installer on the <u>CloudBerry Backup download page</u>.
- 2. Double-click on the **.exe** file to launch the Windows installer. If the system needs the update or required software frameworks are missing, the installer will prompt to fix it.
- 3. On the first launch, choose licensing option to start CBB. It described in detail in **Activation** section below.
- After starting the software, the home page with main options opens. They are gathered into a few groups: Backup Plans, Restore Plans, Backup Storage, History, and Welcome. We shall come back to them later.



Version Update

During the first year, all the updates are free. You can check for the new releases in **Help – Check for Updates** section of CBB Main Menu, or enable the automatic update in the **General** tab of CBB **Options Menu**.

After the first year, updates are available only for customers with a support subscription. CloudBerry Backup Maintenance plan costs 20% of product price and includes annual updates and email-based technical support. You need only one support subscription for any number of CBB copies. Check the price and calculate the bill <u>on the special page</u>.





Options X
RepositoryAdvancedGeneralConnectionBandwidthProxyNotificationRetention PolicyLogging
Setup general settings
Show the program in system tray:
Never
Only when minimized
🔿 Always
Check for a new version automatically
Show confirmation message when closing the wizard
Protect console with master password
Master password:
Confirm password:
Note: You will have to enter the password every time you open the console.
User interface language: English 🗸
OK Cancel Apply

Silent Mode Installation

You can also launch Installation in the silent mode by running the next command in the Windows Command CloudBerryBackup_vx.x.x.xULTIMATE.exe /S [/D=C:\custom installation folder]

Where **vx.x.x.x** is the version of CBB, and **ULTIMATE** is the edition.





Activation using GUI

There is a trial available in case you would like to try CBB first. Click the **Start Trial** button at the bottom left of the window and you'll get 15 days of free usage of the CloudBerry Backup. The activation procedure is explained in detail next.



 You can activate the product at any time – during the trial period or when it is expired. Get the license on the <u>separate page</u> (same to **Buy Online** button) and click on **Activate commercial** version button on the main CloudBerry Backup start screen.





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2. Enter the e-mail and license key received by email into the relevant fields, press Activate.

6	Activate PRO version	×
🚳 Clou	udBerry Backup	
Enter your email, Lic	ense key and click Activate button	
Email:		
License key:		
Offline Activation		
Report issue	Proxy Setting	<u>s</u>
BUY ONLINE	Back Activate	

The program will verify the key and activate the acquired edition.

Note: if you want to change the product edition, e.g. you use Server Edition and want to upgrade to Ultimate, release the Server Edition license in the product and activate an Ultimate Edition. Press on the **Main Menu** button, and select **Help** – **Release Licence**.

If there is no internet connection on the computer, the key won't be verified. In this case, you can activate the product offline.

Activation using Command Line

You can also use console commands to activate the CBB. To activate the trial, change the current path to the CBB installation folder:

cd "C:\Program Files\CloudBerryLab\CloudBerry Backup"

Then run the next command:

cbb.exe activatelicense -e "your_email_adress" -edition "ultimate" -t

Specify the desired edition instead of **ultimate**. To activate the commercial license, run the next command:

cbb.exe activatelicense -e "your_email_adress" -k "license_key" -or





Where **license_key** is the key received.

If you don't have the Internet connection at the moment, use the same command to request offline activation. In the output, you get a service key, which has to be sent to support@cloudberrylab.com.

C:\Program Files\CloudBerryLab\CloudBerry Backup>cbb.exe activatelicense -e "cbt
est@cloudberrylab.com"_k_"b44c73f2=1b4e=4bed=a400=bcc798cf7"_or
CloudBerry Backup - Restore Only Command Line Interface started
Offline request generation
Offline request is generated. Please send the following to support@cloudberrylab
.com
YjrV7kWRUbCU9qnZxsYObYugQHn/ID3r9iHZZVjso1NfgaIzs6VMsU6QBDvALXA1JXOi43cpVNfvxoQ+
hcRcJyatetkBQs1dyrej1QJatcQIRv6DvNiqkWn73vKij9w4aRomhkHsbcM4ed5QkJyJAOI7DIH+H+3M
SndOAFuKsTshJwk+ÖkI I 5UaLJQq8oppCky/k6DBLBfRUMUf i E90jGL3ckJnj0z0RgpVsa1Y6FnxvUbX1
LqVCLypxxTt9pPzkhgxqjxQtbXE18FRcbj1tGicoULinBE2bCYRd7GUdy1wIR+pOfHOAh5MgmkdVf7mg
J.jEwY56cug4=1MKpRFyDdmQoaUEfooth3HmW01od9CbS0sQ5a6ZDsJa2W5gGiKOfU6BLoBeĬp6hgpUgu
XÅpdRm11TgkIACV6pWaLxjw8UIVFk9LdS4QcEHPDzaf+1geuNRx51zI8M6uJVTQ6oCuXxrPiŻLw9ŤEH4
UtĜmfpjnPQ9wKHNtOTTxaHknvWa7+Xe76CGhM48k3GkrOiaxKBbQQFo08HuPfaZN8tnscwM1eSqUgY8G
GUd/amĚ2HŪOachRBCb/1UqU6KbmSuLTSIof9i26U=
C:\Program Files\CloudBerryLab\CloudBerry Backup>

Support will give the activation key. Use key as follows to activate the CBB:

cbb.exe activatelicense -e "email" -k "license_key" -oa "activation_key_received"

For more information, see the **Command Line Interface** section of this document.

How to Backup

Before starting a backup, you may want to tune up CloudBerry Backup settings:set a proxy, limit bandwidth, set default settings for new backup plans, etc.





CloudBerry Backup Configuration

Click **Options** on the **Tools** tab to access application settings. Here you can change CloudBerry Backup parameters.

🏐 🧐 CloudBerry Backup Ultimate E	dition			- 0
Home Tools				
Options Network Disgnostic Settings	ycle Palicy 🕕 Lang ige Service Account	wage *		
Welcome Backup Plan	s Restore Plans	Backup Storage History		
	Total Overview			
Backup Ultimate Edition	Amazon	😥 CB-TEST bud	et 📷	CB-test-Glacier
Survey Stimute Conton	Used spacer C	Options	×	Used space: 0 bytes
/ 🖉 🕑 📔	Consistency Check: N Run E	Lagging Repository Advanced General Connection Bandwidth Proxy Notification	Retention Policy	Cansistency Check: N/W Run Edit
Barlum MS S71 Server	Backup Plans	(9) L		
Baulup His sign server	🔿 Backup Bare N	U U Setup general setongs		
Backup MS Exchange	Last Runi 7/16/2016	Show the program in system tray:		
Setup Backup Plan		Never Ordensteen minimized		
Restore Backup	Backup MS SQ	O Always		
Jocal Backup	Last Run: 7/16/2016	Check for a new version automatically		
	Backup plan o	Show confirmation reessage when closing the victard		
B Lifecyde Policy	Last Run: 7/16/2016	Protect console with master password		
Read the help file online		Master pesswordi		
Web Access	n Backup plan o	Confirm password:		
	Last Run: 7/15/2016	Notes Tou will have to enter the password every tim the console.	e you open	
What's new		User interface language : English v		
Restore to Microsoft Azure for disaster	System backu			
record y	Case Mart: 7/15/2016			
🜉 🌩 🔊		OK. Cancel	Apply	

General

On the **General** tab of **Options**, you can do the following:

- Specify if the CBB icon appears in the system tray.
- Enable automatic version update.
- Prevent accidental Wizard closing with the confirmation window.
- Protect **Options** console with the password.





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Change	interface	language	(15	languages	including	Chinese	are	available).
٨		0	otions	5		x		
Logging Genera	Repository	Advanced Bandwidth	Proxy	Notification F	Retention Policy	L		
T) Setup gen	eral settings						
Shov	v the program i	n system tray:						
۲	Never							
) Only when m	inimized						
) Always							
	heck for a new	version autom	atically					
🗆 🗆 s	how confirmati	on message wh	en closi	ng the wizard				
Р	rotect console	with master pa	ssword					
ľ	laster passwor	d:						
0	onfirm passwo	rd:						
N ti	lote: You will h he console.	have to enter t	ne pass	word every time	e you open			
User	interface langu	uage: English		~				
			ок	Cancel	Apply			



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Connection

If CBB can't reach network destination, it makes several attempts to reestablish the connection before reporting an issue.

٩		(Option	s		x			
Logging	Repository	Advanced Bapdwidth	Provy	Notification	Petention Policy	1			
General Connection Bandwidth Proxy Notification Retention Policy									
Numbe	r of attempts:			З		~			
Time b	etween retry a	attempts (ms	ec):	400		~			
🗌 🗌 Us	e MD5 checksi	m							
L									
			ОК	Canc	el Apply				

At the **Connection** tab, the options define the number of attempts and the timeout period.





Bandwidth

The **Bandwidth** group controls CBB network utilization. It can specify the maximum speed for cloud or local destinations.

3	Optior	is		x
Logging Repository General Connection	Advanced Bandwidth Proxy	Notification	Retention Policy	1
Bandwidth	options			
When using cloud	storage:			
Unlimited	O Max speed:	500	 KByte/s 	
When using local	storage:			
 Unlimited 	O Max speed:	1000	✓ KByte/s	
✓ Enable specific s Monday-Friday Sunday, Sature	Add 8:00 AM-5:00 PM Clo day 8:00 AM-8:02 PM	Edit ud: 9.8 MB/s L Cloud: Unlimite	Remove ocal: Unlimited ed Local: 8.58 GB/	S I
	ОК	Cance	el Apply	





Enab	le specific sche	edule featu	re a	assigns	network	usage	limits	for	each	day	of	the	week.
٢		Sche	dule	e Optio	ons			×					
W	/eekdays and time int	erval: ———											
	🖌 Monday	Vednesd	зу	🖌 Frid	day	📃 Satu	urday						
	🗹 Tuesday	🗹 Thursday				📃 Suno	day						
	From 08:00	^	То	17:	:00								
B	andwidth settings: —												
	When using clou e	d storage:											
	 Unlimited 	🔘 Max spe	ed:	500	~	KByte/s							
	When using local	storage:											
	 Unlimited 	🔘 Max spe	ed:	1000) v	KByte/s							
_													
					Ok		Cance	I					

For time periods not covered by schedule, global settings are applied.





Proxy

At the **Proxy tab**, you can specify the intermediate server for the Internet access. With the **Auto-detect proxy settings** enabled, CloudBerry Backup will use operating system defaults.

٩		(Option	s		x				
Logging General	Repository Connection	Advanced Bandwidth	Proxy	Notification	Retention Policy	1				
Ti	Setup prox	y settings								
⊙ Do	Do not use proxy									
	to-detect prox	ky settings								
O Ma	nual proxy co	nfiguration								
Ad	dress:									
Por	t: 80									
	Use authent	ication								
	Domain:									
	User:									
	Password:									
			ОК	Cance	l Apply					

We recommend testing of the new configurations by creating a backup plan.

Notification

CBB can notice about backup or restoration process completion status via an email. The application will use the email and username specified as the default on the **Notification** step of any Backup and





Re	store								
6	3		Options 2	C					
	Logging	Repository	Advanced Bandwidth Broxy Notification Retention Policy						
	Setup backup notification settings								
	Specif	y the email a	address you want to receive notification:						
	Em	ail: ct	btest@cloudberry.com						
	Us	er name: 🛛	IB-user						
	How v	vould you like	e to send notification emails:						
	۲	Using Cloud	Berry notification service						
	0	Using my SM	MTP server						
		SMTP settin	ngs						
			OK Cancel Apply]					

You may also connect own mail server by selecting of Using my SMTP server option

Repository

CBB uses the database to monitor the contents of the connected storage and track down modifications. File deletion, storage operation by third-party software and backup migration may increase its size, as CBB keeps the old records in case the user will restore data manually. Clicking on



Wizard.



the Shrink Database option will delete redundant records and decrease the database size.

Options	x							
General Connection Bandwidth Proxy Notification Retention Policy Logging Repository Advanced]							
Configure Repository Options								
Current database size: 8.7 MB Shrink Database								
Location: C:\ProgramData\CloudBerryLab\CloudBerry Backup								
Synchronize Repository								
OK Cancel Apply								





Synchronize	Repository	feature	force	the	update	of	backup	storage	database
٨	5	Synchroniz	ze Repo	sitory			x		
This dialog h computer. Pl Select stora	e: This feature If you are no elps synchronize ease contact <u>sup</u> ge account you w	should only b ot sure do not backup settin <u>port@cloudbe</u> ant to synchr	e use in er : use it. Igs betwee errylab.con onize then	mergency en cloud <u>n</u> for moi press 'S	/ cases. storage and re details. ynchronize N	the loc ow' but	al		
Account:	🐣 Amazon (La	st synch was	on 4/13/2	016 3:19	:55 PM)		~		
		Synchr	onize Now						
					[Cle	ose		

As the cloud providers usually charge for the data requests, you should use this features only in particular cases such as described in **Advanced Solutions – Glacier Restore** section of this document.

Retention Policy

Retention Policy defines the number of versions stored for each of backed up files, including their maximum age and the deleting delay time. You can establish custom retention policies for new backup plans, but keep in mind that larger versions history requires more storage space. Find out more in





Additional	Features	-	History	section		of	this	document.
٨		Options			x			
Logging General	Repository Advanced Connection Bandwidth	Proxy No	otification	Retention Policy				
Ti	Setup retention policy				_			
🗌 🗌 Del	ete versions older than							
File	version age: 1	~	day	~				
Image: A start of the start	Always keep the last ve	sion						
🗹 Kee	p number of versions (fo	r each file)						
Nur	mber of versions:	~ ~						
	ay purge for:	~	day	×				
History	retention policy:							
🗌 🗌 Dele	ete records older than							
His	tory file age: 1	÷	ау	×				
🗹 Kee	p number of records							
Nu	mber of records: 1000)						
		ОК	Cance	l Apply				

Other Options

Logging and Advanced options tabs are described in detail in Troubleshooting and Advanced Solutions - CloudBerry Backup Advanced Options sections of the document.

Backup Types

The **Backup** group of options provides the following data backup services:

- File-level;
- Image-level;
- Synthetic;
- Microsoft SQL Server backup;
- Backup of a Microsoft Exchange Server;
- Cloud to Cloud and Cloud to Local transfers.







If you click	c on any c	of these	e optic	ons, the Ba	ackup Pl	an Wizard	aunches	, helpir	ng you to create	the first
Backup	Plan	(it	is	similar	to	Backup	Job	in	third-party	apps).
MS SQL Server	Cloud to Cloud	Restore	Nain Plan Wizard	Refresh P Search				X		
Bac	doup Plans			Welcome	to the Cr	eate Backup I	Plan Wizar	d		
terprise Editio	n 🧃			This wiz files to b advance	and helps you t ackup, compre d settings and a	o create new backup p ssion and encryption op automate process.	an: specify otions,			
MS SQL Server MS Exchange	Bat			2	<u>)</u>	9				
Backup	4								Elapsed: 01:23:13	
ackup s Policy ie help file online		-	Q)						
cess	Cun	1				c BSS Ne	it > Can	<u>a</u>		
w azon EC2 for disaste one as Amazon Mad	Bandw Retry hine Thread	idthi (attempts:) dicount: (Unlimited 3 attempts, tin 6	e between attempts is al frances finister	400 milliseconds					

The Wizard will guide you through all required parameters of a backup plan you have chosen.

File-level Backup

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File-level Backup helps to save various files and folders on the computer. It is the best way to protect a user data since it doesn't require as much space as other backup types and performs generally faster. If you also need to protect OS system partitions, we recommend using Image-level backups.

To start protecting files and folders on the computer do the following:

1. Click the Files button on the Home tab to launch the Wizard.





2.	Click	Next	and	select	а	storage	for	your	backups.
	٢			Crea	te Backı	up Plan Wizar	d		×
				Select Cloud Select Cla one	I Storage bud Storag	e for your Backup (pr create a new		() CloudberryLab
								Ô	Add New Account
				- ?	CB-TEST b	oucket (Amazon	53)		
					CB-test-G	ilacier (Amazon	Glacier)		
				6 0.	Amazon (Amazon Cloud D	rive)		
					MyDedup	(Deduplication !	Server)		
					mapped (File System)			
					MyDrive_	1 (OneDrive)			
		X							
	1						< Back	Next >	Cancel

3. CBB helps facilitate backup management in a number of remote storage providers, so you need to subscribe for one of such cloud storage facility. Alternatively, you can start a sign up







- 4. Let's add Amazon S3 storage as an example. Once you login to S3, CBB will remember the account to choose it quickly for next backup plans. Click **Add New Account** and double click on the Amazon S3 icon in the appeared list.
- 5. In the **Amazon S3 Account** window, specify the display name for this storage and provide security keys to connect existing S3 account. If they are correct, the bucket will appear in the





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Amazon C2 Account	~
Amazon 55 Account	^
Amazon S3 Storage Account Cost Estimates Consistency Check	
Setup Amazon S3 settings	
Amazon 53 account:	-
You can import an account from one of CloudBerry products.	
Display name:	
Our Content of Cont	
Access key:	
Secret key:	
O Use AWS IAM role policy	
Applicable if you run application on AWS EC2 instance	
Bucket name: <pre> <specify bucket=""></specify></pre>	
Advanced settings	
Specify Proxy Settings	
Don't have an Amazon 53 account ?	
Create an account - It will take just a few minutes!	
OK Cancel	

- 6. You can also choose to connect to S3 account via an IAM role policy or to import the credentials from another CloudBerry software. To establish a new S3 account right away, click the **Create a new account** link at the bottom to open AWS sign up page.
- 7. After selecting storage and clicking **Next**, specify the plan's name and decide whether to save its configuration on the cloud storage. That helps to restore jobs and presets in case the local











8. At the next step, select **Advanced**, **Simple** or **Custom** mode for backups. The **Advanced** mode enables many helpful CBB features such as, for example, data encryption and versioning.

٩	Create Backup Plan Wizard	x
	Select Backup Mode Select backup mode depending of that features you want	() CloudberryLab
	 Advanced Mode Encryption, Support multiple file versions, Block level backup You can't access files with other client tools Simple Mode You can access your data with AWS Console Only Amazon Server Side Encryption, No file versions, Block leve applies only for files larger than 5 Gb Custom Mode Store your files in specified folder (no additional folders will be creat cb-test-s3bucket/ Archive Mode (combine all files into one archive) Recommended when you back up a lot of small files to reduce numb to cloud storage 	rel backup red)
	< Back Next >	Cancel

9. If you've chosen the Advanced mode, you can decide whether to **use VSS** or backup NTFS permissions. Another useful feature is **Block Level Backup**. It reduces network and storage utilization by uploading only those parts of the files which have been modified since the last







10. During the following steps, a number of other options are to be selected, such as types of files and folders to store, limitations by the time of their modification, data compression, and encryption. You can also use particular S3 storage classes to reduce storage expenses. Read





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more	on	the	AWS	S 3	Storage	Classes	page.
٩			Create B	Backup P	lan Wizard		x
			Compression an Specify file typ options	d Encrypt i pes you war	ion Options nt to compress and end	cryption	ی CloudberryLab
			Enable compre	ession			
			🗹 Enable encryp	tion			
			Algorithm:		AES 256 bit		~
			Password:		****		
			Confirm pass	word:	****		
			📃 Encrypt fil	enames			
			Server Side Er	ncryption (A	mazon 53 only)		
			Use the A	mazon S3 S	ervice master key 🛛 🧯	2	
			🔘 Use the A	mazon Key I	Management Service n	naster key 🛛 👔	
	191		Key ID:]
			Use Reduced I	Redundancy	/ Storage 🛛 👔		
			Use Standard-	IA Storage	Class 👔		
1					< Back	Next >	Cancel





11. One of the most useful CBB features is **Retention Policy**. It allows specifying the number of versions to keep, their maximum age and the deletion delay timeout.

٥	Create Backup Plan Wizard	×
	Retention Policy Specify retention policy for backup files	CloudberryLab
	Version retention policy (Allowed only in Advanced mode)	
	Use defaults	
	Use default options specified for the whole product	
	O Specify custom retention policy for backup plan	
	Delete versions older than	
	File version age: 1 day	~
	Always keep the last version	
	Keep number of versions (for each file)	
	Number of versions: 3	
	Delay purge for: 3	*
	Delete files that have been deleted locally	
	Delete after: 30 🗘 days	
10		
1000	< Back Next >	Cancel

12. You also need to define a **Schedule** for the new plan, allowing CloudBerry Backup to handle backup plans automatically. You can also proceed next without a schedule, thus making the





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backup	plan	launching	manual.
۵	Create	e Backup Plan Wizard	X
	Schedule Specify sch	nedule options	CloudberryLab
	Backup plan ca No sch Specif Recur Real-t and u	an be run manually or automatically by schedu nedule (run manually) ic date: 7/22/2016 IV Time: (ring (edit schedule) ime Backup time Backup will automatically monitor selected updated files and conv them to cloud storage	le. 20:00
	Stop t	he plan if it runs for: 15 🏠 hour(s) 0	minute(s)
	Not Schedule	d < Back	Next > Cancel

13. If you choose to use block-level backup, CBB can periodically copy all volume data. This Full Backup Schedule goes aside of general schedule, and isn't an inevitable thing. But if a block-level backup runs every day, it is recommended to make a full backup once a week to increase data durability and facilitate restoration.





٩	Create Backup Plan Wizard		X
	Full Backup Schedule Specify full backup schedule options.	() CloudberryLab	
	Schedule full backup Note: It is strongly recommended to run regular full backup when using block level backup. Otherwise you will not be able to apply retention policy for old versions. Edit schedule		
	Stop the plan if it runs for: 15 🦳 hour(s) 0 🦳 minute(s)		
	Run full instead of block level if total size of previous block level back 50 % of last full backup size	ups larger than:	
	Occurs every month on First Sunday at 12:00 AM.		
1000	< Back Next >	Cancel	

Remember that block-level recovery progresses in two steps: first, you recover the last full backup, then apply all the incremental backups made afterwards.

 CBB can execute Windows Command Line scripts before or after the backup job. That helps involve third-party software into the backup process or perform additional CBB tasks. See Advanced Solutions – CloudBerry Backup Advanced Options – Command Line Interface





٩	Create Backup Plan Wizard	X
	Pre / Post Actions Specify commands you want to be executed before and/or after the backup completes	CloudberryLab
	 Execute this command before backup runs: Exit backup plan if pre-backup action failed Continue backup plan if pre-backup action failed 	
	Execute the command after backup completes: Execute post-backup action if backup has been successfully	y completed
	O Execute post-backup action in any case (regardless the backup action) < Back	ckup result)







15. Finally, it is possible to define how CBB can notify you. The backup plan can add status notifications to a Windows event log or send it by email.









16. After clicking Next, a new summary page opens so you could check new settings. Click Next to

Image-level Backup

The image is the file containing the disk data, partitions, structure, file system, and other properties. Unlike the archive, the image copies data on a block level. But still, it is possible to retrieve separate files and folders from the image. This backup type is typically used for a disaster recovery, hardware migration, and virtual machines deployment.

To run the image-based backup, press Bare Metal button on the Home tab.

- 1. After the backup plan's name specification step you have to select the backup type:
- **Image Based** option copies the disk or its separate partitions. You can also recover separate files from the image. This mode allows restoring VM to EC2, Azure or as a virtual disk.
- System Image (former Bare Metal) option backups all root volume with boot files and OS using built-in Windows recovery feature. It's used for restoration to the new hardware or for repair of heavily corrupted system.





• **System State** option copies boot files, registry, drivers and other OS-crucial data with built-in Windows recovery feature. It is often used for a system repairment.



Both **System Image** and **System State** types require the installation of Windows Backup feature. Moreover, they need an intermediate storage on a separate logical disk or network storage, where





 \bigcirc

CBB	accomplishes	images	before	the	upload	to	the	cloud
٢	Cre	ate Bac <mark>k</mark> up B	are Metal / S	System Sta	ate Plan Wiza	rd		x
		Select Inte Select I is trans	Select Intermediate Storage Select temporary storage to place backup data before it is transferred to the Cloud				CloudberryLab	
		• Local D:	hard disk v					
		O Netwo	ork share					_
						Specify ne	etwork credenti	als
1					< Back	Next >	Cance	

System Image Wizard has mostly the same steps as Files Wizard. An important specific option is selecting what partitions will be backed up (all drives, system required partitions or selected ones




only).						
Crea	ate Backup Bare Met	al / System Stat	e Plan Wiza	rd		X
	Select Partitions Select Partitions to	backup			() CloudberryLab	
	 Backup only system All operation system Backup All Drives All disk drives will be 	em required partition required partitions wi added to backup	ns Il be added auto	matically		
	Backup selected p Select partitions to b	p artitions only backup manually				
	Disk Volume S	Size Used	Label	FS Se	ector	
	O O C:\ 2	150 MB 276 MB 19.7 GB 21.0 GB		VIT FS 51 VITFS 51	2b 2b	
1000			< Back	Next >	Cancel	

Also, there are several advanced options such as **Ignoring damaged disk** sectors or using direct access to **NTFS partitions. Block-Level backup** is available as well, and you can specify custom block size to







make	disk	space	saving	even	more	significant
٨	Crea	te Bac <mark>k</mark> up Ba	are Metal / System :	State Plan Wiz	zard	X
		Advanced (Select a	Dptions dvanced options		C	() OudberryLab
		✓ Use bloc	ck level backup ad sectors			
anana arian		Disable 1	VSS, use direct access to I	NTFS volume.		
		📃 Use syst	tem VSS provider			
		Prefetch blo	ock count (0 without prefeto	ch) 100	^ V	
		Block size		1.0 MB	~	
	10					
				< Back	Next >	Cancel

Next, you can set up such options as encryption, compression, schedule, full backup schedule (if you've chosen block-level backup), notifications, etc. As always, you will see the summary of all enabled features at the end.

Synthetic Backup

CloudBerry Backup also supports **Synthetic Full Backup**. This enhancement decreases the amount of data upload to the cloud and accelerates the overall process. We are going to explain the technical background and show how to use the new feature.

Block-Level Analysis

CloudBerry Backup (CBB) features block-level backups which contain only modified image blocks which, in turn, decreases the amount of data transferred to the cloud. But avoiding data losses and making recovery faster requires regular full backups, which upload a large amount of data, even if it's already stored in the previous copies. You can read more about this process in <u>Block vs. Full</u> <u>Backup</u> post.

Synthetic Full Backup (SFB) helps to reduce the amount of data uploaded and accelerates a full backup creation. SFB compares local data blocks with the cloud repository and then uploads only





modified ones. Currently existing blocks in the cloud that haven't been modified since the last full backup or the last synthetic full session are automatically copied to the new backup file by AWS services within the cloud.

In the upshot, Synthetic Full Backup helps to substantially decrease upload volume from the local computer. According to our tests it makes backup process up to 20 times faster (since copying files withing the cloud is considerably faster than copying them from the local PC to the cloud). At the moment, the feature sticks to the AWS as it is one of the few systems that allow moving data blocks within the cloud storage. Now we're working on implementing this feature for Azure Blob storage.

If you're using synthetic backup with Amazon S3 Standard-IA storage class, bear in mind one proviso regarding the pricing policy. When you initiate the second full back-up, the principal part of those files will be copied within the cloud itself. And you will be charged accordingly - \$0.01/GB.

How to Enable Synthetic Backup?

There are some restrictions on using the Synthetic Full Backup:

- Amazon S3 must be the target cloud storage.
- Encryption options must remain unchanged since the last full backup.
- One of more full backups have to be made before you activate synthetic backup.

To enable the new feature, create a new image-based plan. Select the **block-level** checkbox when configuring a particular plan. Then select the **Synthetic full backup** checkbox.





Create Backup Image Based	d / System State Plan Wizard	×
	Full Backup Options Specify full backup schedule options. Clouds) DerryLab
	Schedule full backup Note: It is strongly recommended to run regular full backup when using blo backup. Otherwise you will not be able to apply retention policy for old vers Edit schedule	ick level ions.
	Stop the plan if it runs for: 15 + hour(s) 0 + minute(s) Not Scheduled	
	 Synthetic full backup Note: This is synthesised between source and destination, whose main go- shorten backup window and reduce bandwidth utilisation by injecting existing the backup destination blocks into following synthetic full 	al is to 1g bits in
	< Back Next > C	ancel

Then, force a full backup from the Backup Plans tab to start using the SFB feature. You can see it working in the Progress Bar.

Backup Ba andembs - g	re Metal / System State on 17.03.2016 13:43:03 - 17bd19b1-3334-4394-8b4f-27570731dbcb Jacier	(1) Not scheduled	*
Backup:	Image Besed backup: Dink 1(SPT): Elimounti 999 MB (311 MB)	Total file size: 333 MB 🔉 62%0	251 MB)
Schedule:	Full backup: Occurs on Thursday, March 17, 2016 1 00 AM	62%	
Compression:	Erabled	Bapsed: 00:00:38 Speed: 244 KB/sec	
Current Status:	Running	Left: 00:21:35 2.0 mbps	
Last Run:	11/2/2016 7:33 PM	Current file: CBI_DiskImage\Disk_3ebd0b4f-flica-4c1e-bb31-02blaa	548d
Last Result:	Running	Files copied: 1 of 2	
Files Uploaded:	1 (142 KB)		
Backup Duration	a 38 seconds		
Synthetic ECO:	155 MB of 333 MB are copied inside the cloud		
Ø Edit 曽 Dele	te 🖸 Restore Files 🔒 View Backup Storage 🕐 View History C Force Full Backup 🏢 Clone Plan		

The synthetic image will display under the **Backup Storage** tab.





	udlery Back	p Ottomana 101	ier.											. # ×
<u> </u>		50. Sever Octoore	Cloud to Cloud Doud to Local	C	Restore to EC2	0	Clench Q Search							
files in		heley		Reduce	Recover	Note Bootable U	a Mic							
-		Barbap	1ana 1	estore Plans	Backup Stora		History							
	S Bankapa S Bankapa Marg Marg Marga Honol Ra California Ra, Banan Insk Marga Tanana Kap Pilana	chages encopy chamoms					Nation Too Tool Too Tools and Tools and Tools and	New Ball (1975) - 46 Kille (2014) Ball (1975) - 46 Kille (2014) Ball (1975) - 46 Kille (2014) Ball (1975) - 46 Kille (2014)	048 2249-264.0094 (249-264.0094 2449-264.0094 2449-264.0094	Last vehiched 1 for Sie in Siener Sie in Siener 2010 2010	ur 12 Annuber age Compresent An Na Na Das	Dropest		
O Index In	vice stated	Bill Service	stated											Bull 111.7

CloudBerry Backup identifies synthetic image as a full backup because there is no technical distinction between them so that you can operate them with <u>CloudBerry Explorer</u>, <u>CloudBerry Drive</u> or other third-party apps.

Note that using this feature makes sense only if the source partition is larger than 100MB.

Bootable USB Creation

With CloudBerry Backup it is possible to create a recovery disk, which can fix the system in case of a critical error, outage or to move the system to another device. As an option, it can create an ISO image to deploy the recovery data on other storage facilities such as optical disks, Storage Area Network devices, etc.

Click on **Make bootable USB** button on **Home** tab and select an option to create a bare metal restoration disk. You can also protect the drive with a password.





٨	Create Recovery Disk
Select USB device or ISO in then press Create Disk but	age file to create a new Recovery Disk for bare metal restore con.
Note: all information from	this device will be permanently removed
USB Device:	✓ Refresh
O ISO image:	
☑ Protect Recovery Disk	with master password
Master password:	
Confirm password:	
Path to drivers:	🖓
	Create Disk
	Close

Microsoft Exchange Backup

Main structural units of Microsoft Exchange is **EDB-files and logs**, which contain all user data like emails, contacts, calendars, etc. File level backup is too clumsy here because it needs accurate option adjustment, and image-based takes too much storage place. To facilitate Exchange server maintenance, we designed particular backup technique.

Use Exchange Backup Wizard to create a separate backup of a Microsoft Exchange server. It starts by pressing **Microsoft Exchange** button on the **Home** tab, or picking **Backup Microsoft Exchange** on **Welcome** tab.





1. After choosing the storage account and specifying plan name, you have to select databases for backup.



 During the next steps, you can enable encryption, compression, scheduling, and configure Retention Policy. In essence, it is similar to retention policy of file or image-level backup. CBB creates a version of the file on each time it is modified, thus limiting an amount of versions to





be	kept	for	one	file.	This	helps	to	avoid	backup	size	overflow.
				Ret	ention Po Specify re	licy tention polic	y for bac	:kup files		C	ی loudberryLab
				Vers	sion retenti	on policy					
01700				(🖲 Use def	aults					
					Use de	fault <u>options</u>	specified	l for the whol	e product		
				(Specify	custom rete	ntion po	licy for backu	ıp plan		
-					Dele	ete versions (older tha	n			
					Full	backup vers	ion age:	1	🗘 day		<u>^</u>
					\checkmark	Always keep	the last	version			
					📃 Kee	p number of	full back	ups:			
					Nu	mber of vers	ions:	3	<u>^</u>		
			0								
	AY			1							
	K							< [Back	Next >	Cancel

- 3. Then, you need to specify the **Schedules** of full and incremental backups. It works same as for block-level backup to recover the database, you need to restore the latest full backup and then update it with the modified files.
- 4. Finally, it is necessary to set up the notifications and pre-post actions. The list of enabled functions displays at the final step.

Microsoft SQL Server Backup

If you need to backup Microsoft SQL databases separately, CloudBerry Backup can easily cope with this task. CBB can use any of the authorization methods available and create a backup only of chosen database elements.

Activate Backup Plan Wizard by clicking on **Microsoft SQL Server** button on **Home** tab, or by selecting **Backup Microsoft SQL Server** on the **Welcome** tab.

 Specify the backup plan name, and then select which SQL instance to backup and authentication method for CBB to access server. You can also check whether selected SQL login has sysadmin role, which is necessary for full-fledged backup.





٩	Create MS SQL Server	Backup Plan Wizard	X
	Select MS SQL Server Ins Select local MS SQL Serv	t ance rer Instance	CloudberryLab
	SQL Server Instance:	CB-TEST-VM	~
	Authentication:	SQL Server Authentication	~
	Login:	admin	~
	Password:	•••••	
		Remember password	
	Check if the specified a	iccount has necessary permissions to perf	orm backup
	Leave this option if yo permissions to perfor	u want to make sure that specified accou n MS SQL Server database backup.	nt has necessary
100		< Back Next >	Cancel





2.	Then	select	databases	for	backup.
	٢		Create MS SQL Server Backup Pl	an Wizard	X
			Select Databases Select databases to back up		CloudberryLab
			Back up all databases Back up all databases on selected instar	nce includes user and s	system databases
			 Back up all user databases only Back up all user databases only (system included) Back up selected databases only 	n databases like maste	r and model are not
			Back up only selected databases		
			 master model msdb 		
				< Back N	lext > Cancel

3. Finally, you set up the rest of the options: retention policy of database versions, email notifications, maintenance schedule, etc. All features enabled will display on the **Summary** screen.

Cloud to Cloud Backup

CBB can backup your data stored on the cloud storage, or increase durability of the offsite-stored backups with Cloud to Cloud Backup Plan Wizard, which accessible under the **Cloud to Cloud** button













1. First, Select Cloud Storage and the exact buckets, folders, and files to be backed up.





٩	Create Backup Plan Wizard	X
	Backup Source Specify files and folders you want to backup	CloudberryLab
	Cb-test-s3bucket CBB_CB-TEST-VM CBB_WIN7-VIRTUAL CBB_Configuration CBB_configuration	Show legend
1000	< Back Next >	> Cancel





2.	Then,	specify	the	destination	cloud	storage.
	٨		Crea	te Backup Plan Wizard		X
			Select Cloud S Select desi	Storage ination cloud storage or create a	new one	() CloudberryLab
			~		õ	Add New Account
			🖞 🔿 СЕ	3-TEST bucket (Amazon S3)		
			📥 🔿 An	nazon (Amazon Cloud Drive)		
			🌰 🖲 Му	Drive_1 (OneDrive)		
		20				
	5		L			
				< E	ack Next >	> Cancel







3. Next, choose a name for the newly created backup plan and select Backup Mode.

4. Depending on previous step's presets, configure file filter options, encryption, compression, retention policy for file versions, schedule, etc.

Note: encryption and compression may be not supported on the destination storage.

5. On the final screen, you'll see the list of the options enabled.

Cloud to Local Backup

As a rule, local storage facilities are backed up to the cloud, but it's possible to do inversely and save on additional copies maintenance. It may also be a part of the data lifecycle when outdated files move on a low-cost storage facility. To help you with cloud to local backup, CBB has a special tool aboard.





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3	Create Backup Plan Wizard		X
	Backup Source Specify files and folders you want to backup	() CloudberryLab	
	Cb-test-s3bucket CBB_CB-TEST-VM C: CBB_Configuration Beb45985-0e69-420c-969b-5355ccff6ea6.cbb: Beace12d1-3883-4ce3-a99f-6e00cd90f75c.cbb: Beginsesttings.list: Beginsesttings.list: CBB_Database CBB_Database CBB_PostrgreSQL CBB_WIN7-VIRTUAL my-private-cbtest	Show leg	end
1000	< Back Next	> Cancel	





2.	Then,	pick	up	the	local	endpoint	facility	or	create	а	new	one.	
	٨					Create Backu	p Plan Wiz	zard					X
					Select I Sel	_ocal Storage ect destination loca	l storage or cr	eate a ne	w one		Cloudbe) erryLab	
						• manned (Eile	System)			õ	Add Nev	v Account	
							, o you contribution of the second						
		5	Y										
		12						< Ba	ack	Next >		Cancel	

3. Finally, configure the routine backup plan options like file filter, encryption, schedule, etc. The summary of all features enabled displays at the final screen of the Wizard. New Cloud to Local plan will function as the file-level backup.

Backup Plans Management

You	can	access	all	created	backup	plans	at	the	Backup	Plans	tab.	
🖏 Beckup B	are Metal / Syst	em State on 4/24/2016 5:	08:29 PM (ovtg	oth) (Google Cloud)						Stop II	8	
🖸 Backup p	🕽 Backup plan on 4/24/2016 8-6586 AM (ostgoth) (Scogle Cloud)											
Backage	Backage C. (Jaser) Administrator							Instant backup starts in 6 seconds				
Schedule Current S	tabasc	Biock level backup : Real-time I Instant backup starts in 6 sec	lackup anda					Elapseck 01:16:17	Speed:			
Last Ruro Last Rese	e:	4(24)(2016 4:18 PM					0	urrent Nei				
Piles Uple Backup D	Piles Upleaded: 0 Backup Duratian: 1 hur 16 minutes 17 seconds							es capied: 0	lor 0			
ER Badup P	Dit Badue Han Dekte Badue Han Bestorn Hes Versithäters Force Full Badue Core alan											

Click the green field to view a plan's details, check its progress, view history, edit or delete. You can also turn off\on backup schedule.





How to Restore

The **Restore** options provide the following data recovery services:

- Files recovers separate files and folders.
- Image and System State deploys system recovery kit on the local storage.
- **Cloud VM** deploys a server image as Azure VM or Amazon EC2 instance (Google CE is coming soon).
- Microsoft SQL Server recovers database files.
- Microsoft Exchange Server restores Exchange data and logs.

3	Restore Wizard	×					
	Type of Data Select type of data for restore	CloudberryLab					
	Restore files and folders						
	🔿 Restore MS SQL Server Database 🛛 😰						
	🔿 Restore MS SQL Server backup files 🛛 😰						
	\bigcirc Restore files from archives $~~ \cap{B}$						
	🔿 Restore Image Based Backup 🛛 😰						
	🔘 Bare Metal Restore 🛛 🔋						
	🔘 Restore System State 🛛 😨						
100	< Back Next >	Cancel					

These options can be managed within the **Restore Wizard**. It starts by pressing the **Restore** button at the Home tab, or by picking **Restore Backup** at the **Welcome** tab.





















Finally, select a type of data to recover, and the Wizard will guide you through all the required steps for successful data restoration.

File-level Restore

File recovery is commonly used to retrieve working data and restore particular elements of system and applications, e.g. configurations files, registry elements, etc. To start file-level recovery, select





Restore	files	and	folders	option	on	the	type	of	data	screen	of	Restore	Wizard
3					R	estore	Wizar	d					X
				Type of D a Select	ita type of	data for	restore					() CloudberryLal)
				Restore	e files a	nd fold	ers 🧊		2				
					MS S	QL Serv	er backu	ip files	: ?				
				 Restore Restore 	e files fi e Imag	rom arc e Basec	thives 🛛 🍹	?					
				O Bare M	etal Re	store	?						
				 Restore 	e Syste	m State	e 🦻						
3	8	4											
	14								< Back	N	ext >	Can	cel

1. At the beginning, select the version of the data to recover. The **Latest version** will recover the last backup made, **Point in time** will restore the nearest backup version before specified time, and with **Manually** option you can choose the version for each file or folder separately.







Do not restore files located in Glacier option will prevent unexpected expenses on files, whichare placed to AWS Glacier according to lifecycle policies. Find out more in Advanced Solutions-ArchivetoGlacierandLifecyclePoliciessection.





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If the storage contents might have changed since the last backup, use **Synchronize Repository** option to update the CBB backup database. This feature explained in **How to Backup – CloudBerry Backup Configuration – Repository** section of this document.





3.	Next	select	recovery	Destination	and	its	options.			
	3			Restore Wizard			X			
			Destination Specify	local folder you want to res	tore the selected (objects	CloudberryLab			
			Restore	Restore to original location						
			○ Restore	 Restore to specific location 						
			Destinatio	on:			Browse			
			Save 🗌	this location as default dest	ination for future r	restore				
			🗌 Overwrite	Overwrite existing files						
			🗌 Resto	re only new files						
			Note:	Note: files with newer date modified attribute will be restored						
			Restore N Note: T objects (ITFS permissions his option will be applied if t files and folders)	he backup contair	ns NTFS permi	ssions for restored			
					< Back	Next >	Cancel			

By default, data is restored to the original location, though you can download it to another folder, overwrite files with coinciding names and restore NTFS permissions (if they were backed up before).





4.	Then,	decrypt	files	by	specifying	the	password.
	٨		R	estore Wiz	ard		X
			Encryption Option Specify encryp	ns Dition options			() CloudberryLab
			Decrypt encryp Password: Confirm passwo	ted files with t	ne following password		
					< Back	Next >	Cancel

If the data is ciphered, but the password isn't fed into, CloudBerry Backup will download encrypted files for manual decryption.

5. On the next step, configure **Notification** settings. CBB can inform you about recovery status via email and add the corresponding entry to the Windows Events.





٩	Res	store Wizard	X			
	Notification Specify notificati	on options	CloudberryLab			
	✓ I want to receive notification email when restore completes					
	When restore fails					
	O In all cases					
	Email:	cbtest@cloudberry.com	3			
and the second	User name:	CB-user				
A DESCRIPTION OF A DESC	Email subject:	CloudBerry Restore %RESULT%	2			
Services 1977	☐ I want to use my SMTP server for email notifications					
	Specify this of specifying an	otion if you want to send notification emails additional SMTP settings	using your own SMTP serv			
	🗌 Add entry to Wir	ndows Event Log when plan completes				
	When restored	re fails				
RQ	O In all cases					
1000		< Back N	lext > Cancel			

One can also use own SMTP server for notifications instead of built-in CBB service.





۵	Restore Wizard	X
	Summary	CloudberryLab
	Summary: , ¹ Aun restore once Bucket name: cb-test-s3bucket Backup prefix: CB-TEST-VM Restore Type: Latest version Restore: C:\Users\Vitaly\Documents\My Data Destination folder: restore files to original location Encryption: disabled Notification options: send notification to cbtest@cloudberry.com when backup fails	
100	< Back	Next > Cancel

6. Finally, you'll see the **Summary** screen with all the recovery option chosen.

Press Next to create a Restore Plan and then Finish to begin the data recovery.

After the Wizard is finished, the **Restore Plans** tab will open – here you can track down the recovery process. If you've chosen **Restore Once** option, the restore plan will disappear after finishing the task.

Welcome	Backup Plans Restore Plans	Backup Storage	History		
Restore plan on 7/16/2	016 7:46:11 AM (CB-test-S3) (Amazon S3)				
Restore: Destination: Schodule: Current Status: Last Runc	C) Restore to original location Not Scheduled Proparing 7/16/2016 7:re6 AM		Total file stor: 0 bytes Elapsed: 80.00:00 Left: 00:00:00 Council line	Speed:	
Last Result: Files Downloaded: Restore Duration: Edit Restore Flan Delate B	Running a stors Plan View History Clans alan			Current: the: Files capled: 0 of 0	C Stop Restore

Image-level Restore

There are several ways of image-based recovery:

• **Restore Image Based Backup** – recovers the whole machine from the image file. In this mode, you can also restore the data to Amazon Elastic Compute Cloud (EC2) and Azure virtual machines.





- System Image (former Bare Metal) Restore recovers all root volume with boot files, thus used for restoration to the new hardware or for repair of the entire system.
- System State Restore recovers boot and system files. It's designed for system repair tasks.

The last two options involve Windows restoration service, so the Wizard will prompt to install it. They also need enough disk space to download recovery images, which may be deleted after restore job finished.

Image and Virtual Machine Restore

- 1. After you choose the **Restore Image Based Backup** option, the Wizard will ask to specify **Restore Type** and choose which version of an image to retrieve. It works just like with files recovery.
- 2. Select the data type to recover. On this step, the following options are available:

٩	Restore Wizard		X			
	Type of Data Select type of data for restore	CloudberryLab				
	 Restore as physical disk Use this option if you want to restore Image Backup to a Restore as virtual disk Use this option to restore as virtual disk file. Later you a 	a physical disk can mount this disk as virtual				
	Select virtual file format: Hyper-V Virtual Disk (VHDX-format) dynamic Restore as Amazon EC2 Instance Supported OS: Windows 2003, 2008, 2012 Create AMI (Amazon Machine Image)					
	 Restore as EBS Volume Restore as Azure Virtual Machine Restore as Azure Data disk 					
1000	< Back	Next > Cancel				

- Restore as physical disk formats the chosen local disk and deploy the image contents to it.
- **Restore as virtual disk** creates a virtual disk file to be mounted within VirtualBox, Hyper-V or VMware virtual machine systems: you can also create a RAW disk image.
- **Restore as Amazon EC2 Instance** deploys Amazon cloud virtual machine using the image data. You need to have the Amazon Web Services (AWS) account to use this option. *Note: If you select to convert the backup to .AMI (Amazon Machine Image) file, the virtual machine will start immediately after finishing the Wizard. Otherwise, you need to access it via Amazon Management Console and launch manually.*

Learn more



- **Restore as EBS volume** creates Amazon Elastic Block storage volume to be mounted to EC2 instances or used separately. You need to have AWS account for this too.
- **Restore as Azure Virtual Machine** deploys and automatically launches Microsoft Azure VM instance using the image data. You need to have Azure VM account to use this option.

Each option requires specific adjustments. We shall look them over below.

Restore as physical disk

1. If you choose the recovery to the physical disk, select image partitions to restore on the next step.

٩	Resto	re Wizard		X
	Select Partitions Select partitions to r	restore	CloudberryLa	b
	Disk Volum∈ Size	Used Label	FS Sector	
	✓ 0 C:\ 29.7 G	βB 28.0 GB	NTFS 512b	
1000		< Back	Next > Can	icel

Then, select a destination for the image data deployment. If it is a physical disk, CBB will format it according to the partition scheme of the image. You can also distribute data across existing local disks.





٨	Restore Wizard	X					
	Destination Select destination for restore	CloudberryLab					
	Select a physical disk Physical disk: HDD: 0 Fixed 30.0 GB AWS PVDISK SCSI Disk Device						
	Important: All information on selected disk will be permanently destoryed						
	Select a specific partition Selected partition 350 MB AWS PVDISK SCSI Disk Device C:\ 29.7 GB AWS PVDISK SCSI Disk Device	Restore as 350 MB AWS PVDISK SC V C:\ 29.7 GB AWS PVDISK V					
	< Back	Next > Cancel					

Note: recovery to the boot volume is not allowed.

- 3. Next, specify the decryption password if needed and set up notifications. All chosen option will be displayed on the Summary screen.
- 4. After the Wizard has finished, CBB will download the image and deploy it onto the chosen disk. It will disappear in Windows Explorer when the recovery begins. If the restored disk has a boot volume, the firmware will recognize it, and the system on the disk will start on this or another computer after proper BIOS setting.

Restore as virtual disk

1. If virtual disk option selected, choose partitions for recovery. Next, pick up **Destination** to save
the virtual disk and specify its name.





Restore Wizard				
	Destination Specify local folder you want to restore the selected partitions		CloudberryLab	
	Destination folder: Virtual image name:	C:\vm_disk_folder	Browse	
	Overwrite existing	i files		
		< Back	Next > Cancel	

- 2. Configure file deciphering, notifications options, etc.
- Then, you can attach this disk to the existent VM or deploy a new one based on the disk data. Here are the guides how to do it in <u>Virtualbox</u>, <u>VMware</u> and <u>Hyper-V</u> systems.

Restore as EC2 Instance

If you choose to recover the image as Amazon EC2 virtual machine, specify target instance details and choose the AWS account on the next step. Use the account already registered in CloudBerry Backup or add a new one. To setup an instance, you must have a role with name *vmimport* in AWS account.





٥	Restore Wiz	ard	x	
	Specify Target EC2 Instance details EC2 Instance Details		(LoudberryLab	
	Temporary 53 storag	e and target EC2 instance account: -		
	Select Account: c	b-win-test-2	¥	
	Note: make sure the specified account has required permissions			
	Target EC2 Instance	Target EC2 Instance Details		
	Region:	IS East (Northern Virginia)	¥	
			Refresh	
	Instance type: t	1.micro	¥	
	Subnet: s	ubnet-44f6de6e us-east-1b	¥	
	Security Group: d	lefault	¥	
NQ	IAM role:	:Select IAM role>	~	
100		< Back Next >	Cancel	

If the target account is configured correctly, you can select instance type and other EC2 credentials.

2. Configure file deciphering, notifications options, etc.

Restore as EBS Volume

- If you want to restore the image as the Amazon Elastic Block Storage volume, select Amazon S3 account or create a new one. Then choose the **Region** and **Availability Zone** for a volume. You need to know that:
 - a. Newly created EBS instance won't be prepared to function as a boot volume.
 - b. The AWS account must have the required permissions. Visit <u>AWS Controlling Access to</u> <u>Amazon EC2 Resources page</u> to find out more.





٩	Restore Wizard	×			
	Specify Target EC2 Instance details EC2 Instance Details	CloudberryLab			
	Temporary 53 storage and target EC2 instance account	;			
Sector sector and	Select Account: cb-win-test-2	~			
	Note: make sure the specified account has required pe	Note: make sure the specified account has required permissions			
Second Contract	Target EC2 Instance Details	Target EC2 Instance Details			
	Region: US East (Northern Virginia)	~			
		Refresh			
	Availability Zones: us-east-1b	~			
R					
	< Back Next	> Cancel			

- 2. Select partitions for restoration and configure deciphering, notifications options, etc.
- 3. After the Wizard finishes, you may find new EBS Volume in Amazon EC2 Management Console and attach it to any desired instance.

Restore as Azure Virtual Machine

1. After you choose to restore image as Azure VM, select Azure VM account registered within CloudBerry Backup or add a new one, and then specify details of the new virtual machine instance. You can find all fields parameters in the Azure Control Panel.




٢	Restore	Wizard X
	Specify Azure Virtual M Azure Virtual Machine	Instance Details CloudberryLab
	Select Account:	AzureVM account V Edit Azure VM Account
	Computer Name Resource group: VM Size: Network: Subnet: Storage: Bucket: Boot diagnostic	CB-test-VM Default-Networking Basic_A2 Disk size:60.0 GB Memory: 3.50 GB Name: CBB-lab-1 AddressSpace: 10.0.0.0/16 Name: CBB-lab-1 AddressSpace: 10.0.0.0/16 Name: default AddressPrefix: 10.0.0.0/24 Name: cbl1 Location: eastus AccountType: Stand /cbb-blob-1/ Name: cbl1 Location: eastus AccountType: Stand
	storage:	<back next=""> Cancel</back>

2. Then, choose the image partitions for recovery and configure notifications, decryption, etc.





3. Finish the Wizard. One restore task completes, VM starts automatically and displays in the Microsoft Azure console.







Restore as Azure Data Disk

1. If you want to create Azure Data Disk instance with the contents of the backup image, select Azure VM Account (or create a new one), and specify the custom name and other disk details.

٩	Restore V	Vizard X
	Specify Azure Data disk Azure Data disk details	details Ostation CloudberryLab
	Select Account:	AzureVM account
	Data disk name	CB-test-AzureDD
	Resource group:	Default-Networking 🗸
	Storage:	Name: cbl1Location: eastus AccountType: Stand 🖌
A LAN	Bucket:	/cbb-blob-1/ V
1000		< Back Next > Cancel

- 2. Next, select disk partitions to restore and set up notifications and deciphering to complete the Wizard.
- When the recovery has finished, new disk displays in Microsoft Azure Management console. You can attach it to existing Azure VM instance or deploy a new one based on the disk data. Find out more <u>on special Azure guide page</u>.

Item-level restore for Microsoft Exchange.

Starting from version 5.2, CloudBerry Backup enhances support for Microsoft Exchange. Formerly, you were somewhat limited when it comes to restoring your Exchange files. To wit, you could only restore complete EDB files and logs from the Exchange server, which is sufficient for essential tasks; however, many professionals found it to be deficient. Well, no longer! Now we're gonna explain how to perform item-lever Microsoft Exchange restore.

To enable the feature, you must make a new full backup of the Exchange database. It is due to significant changes in the backup format. Having done so, open CloudBerry Backup 5.2 or newer. Under **Backup Storage** locate your database. Right-click on it and click **Item Lever restore**.







A pop-up window will appear and ask you if you wish to apply logs. Roughly speaking, it would add information from the logs to the database and subsequently remove unnecessary logs.

CloudBer	ry Backup Ultimate Edition		×
?	Do you want to apply logs to Ex open? This may take a few minu	change database tes.	: backup you
	Yes	No	Cancel

A newly appeared window is the Microsoft Exchange item-level restore assistant. On the left you can see a file structure of your mailboxes, emails, calendar events, contacts, etc. Select the files you want to restore.





Exchange Item Level Restore: all on k disk/	10/28/2016 12:00:06 PM	
Maibox - A P Maibox - A P m inbox m coutbox Second Level g Restared m Deleted Items	From: To: Appl Subject: Sent: Select a date 15 - Select a date 15 2 items loaded. Select a date 15 - Select a date 15 -	*
Calendar Contacts Contacts	Subject Sent Size Set Size Set Size Size Size Size Size Size Size Size	
	Anton Zeilinger of the University of Vienna carried out quantum teleportation From: A P Sent: 10/5/2016 5:21:42 PM To: A P-calexanderp@dub.cbl.corp>	11
Mailbox - CHIKAS 80886965-LGU0000	In 2012, Anton Zeilinger of the University of Vienna carried out quantum teleportation over 143km of free space between different Canary Islands.	
Mailbox - CHIKAS B0886965-LGU0000 H Dibox G Outbox G Outbox G Sent Trems	But Dr Tittel says his study uses a configuration that could serve as the benchmark for useful city-based quantum networks. Both studies demonstrate that teleportation works over several kilometres of the optical fibre used in metropolitan areas.	
Deleted Items Galendar Deleted Items	In future, theoretical devices known as repeaters could help amplify signals, enabling communications - a quantum internet, if you like - over much bigger distances.	
	This could enable the roll-out of much more secure communications offered by quantum cryptography. This would enable	10

Right-click on them and click **Restore**.

2	items	load	led.

Subject		Sent	Size
test subitems 2		9/21/2016 5:35:27 PM	771 bytes
🔀 Anton Zeilinger of th	e University of Vience carried out quantum teleport Restore	tation 10/5/2016 5:21:42 PM	7 KB
	Send to support		

Now enter your Microsoft Exchange credentials and click **OK**.

User email:	alex@club.cbl.corp	1
Password:	******	
Well-known folder:	Inbox	•





Done! Your files should be successfully restored by now.

Currently, CloudBerry Backup is only compatible with MS Exchange 2010. We keep working on the Exchange Backup and will introduce a full-featured items recovery in the near future to support MS Exchange 2007, 2013 and 2016.

System Image (formerly Bare-Metal) Restore

- In the Restore Wizard, choose backup storage and the version of the image file. Then, pick up System Image Restore option on the Type of Data step and select the backup to recover.
- 2. On the **Restore Source** step, pick up the exact recovery file. Here one can check the backup date, the size of the image and see if the file is compressed or encrypted. You can access the properties table in a more convenient way by clicking on the **View in dialog** option.

3	Select files and folders for restore						
Name	Date	Size on Storage	Compressed	Encrypted			
🗹 🗋 Bare metal	7/16/2016 4:27 AM	10.6 GB	Yes	No			
On the Dectination stan	haasa tha faldar an tha a	tornal driva	to download	d the system			

3. On the **Destination** step, choose the folder on the external drive to download the system image.

3	Restore Wizard	x
	Destination Specify local folder you want to restore the selected objects Cloudbe)) erryLab
	 Restore to original location Restore to specific location 	
	Destination: D:\BareMetalTemp Brow	wse
	Save this location as default destination for future restore	
	Overwrite existing files	
	Restore only new files	
	Note: files with newer date modified attribute will be restored	
	Restore NTFS permissions	
	Note: This option will be applied if the backup contains NTFS permissions for restored objects (files and folders)	or
100	< Back Next > Ca	ncel





The **Restore to specific location** option is not available because you just need to extract the recovery image for Windows native repair service.

- 4. Configure decryption and notification settings and review the **Summary** screen.
- 5. After the Wizard has finished, CloudBerry Backup will switch to the **Restore Plans** tab to track the

ile ile							p10000001	
Welcome	Badoup Plans	Restore Plans	Backup Storage	History				
Restore plan on 7/16/2	016 7:42:19 AM (CB-best-5	3) (Amazon 53)						8
Restore:	Bare metal				Total file size: 19.	6 GB 💭	3%s(328 MB)	
Schedules	Not Scheduled				Elapsech 00:00:16	Speed	29 MB(conc	
Last Run:	7/16/2016 7:42 AM				Left: 00:12:13	D-1 016-07-16 0420121+262	241.5 mbps	
Last Result: Files Downloaded:	Running 24 (4.7 M8)				Files copied:	24 of 26	100-11/2/100-0121-00000	
Restore Duration: Edit Restore Plan Delete Re	16 seconds extern Plan View History	Ciene alan						
							Stop Restore	

When the download completes, check the **WindowsImageBackup** folder on the external drive.

- 6. Connect this drive to the machine you want to recover. Then, do the next:
 - a. If there is no OS on the computer, just reboot it.
 - b. If there is an OS installed, plug in Windows installation disk and choose to boot from it in your firmware settings. Then, reboot the machine.
 - c. Otherwise, reboot the computer, press **F8** while firmware starts and select **Repair Your Computer** option.

Windows Install & Repair Wizard will initialize. The System-Image recovery goes in a few steps:





1.

Choose	language,	time	format,	and	input	method.
👋 Install W	/indows					<u>-0×</u>
100			_			
		Win	dows Server	2008		
1.000						
1.1						
1.0	Language	to install: Eng	lish			-
10.0	Time and curren	cy format: Fng	lish (United States	3	1.1	-
		, ing	instr (ornice states			
	<u>K</u> eyboard or inpu	t method: US				-
						1.0.00
	Enter your	language and o	other preferences	and click "Nex		
	it © 2009 Microsoft Corp					Next
						12





2.	Select	Repair	your	computer	option.
	💐 Install W	Vindows			
	1000				
	100		Windows Son	or 2009	
	100		vvii iuovvs sei v	CI 2006	
	1000			-	
			<u>I</u> nstall now	 Weight (1) 	
	1175				
	1.0				
	110				
	<u>W</u> hat t	o know before installing \	Windows		
	<u>R</u> epair	your computer	_		
	Copyrigh	nt © 2009 Microsoft Corporation. A	I rights reserved.		
					5
					~

3. Check Restore your computer using a system image that you created earlier option.

Operating System Isn't listed, dick Load Drivers and then one of the state of the s





4.	Choose	Select	а	system	image	option.	
	🛺 Re-in	age your computer					×
			Select a This compute Everything o information i	system in er will be restor on this compute on the system in	mage backup ed using the system r will be replaced wi nage.	p n image. ith the	
			C Use the li	atest available New V	system image(reco olume (D:)	mmended)	
			Date and tin	ne: 6/16/2	2016 6:49:45 AM (G	GMT-8:00)	
			Computer:	QA-W	IN2008SR2		
			• Select as	system image			
				< Back	Next	Cancel	





ā	(f the system ima and then click Ref	ge is on an ex fresh.	ternal device, attach the	device to this comp	outer,
If t Ad up Cu	the system image lvanced to add a in the list below, rrent time zone:	is on a DVD, i network locati GMT-8:00	nsert the last DVD from on or install a driver for	the system image ba a backup device if it	ackup. Click does not show
Γ	ocation	Most	recent system image	Computer	
	New Volume (D:)	6/16/	2016 6:49:45 AM	QA-WIN2008RE	







7. When the restoration is completed, relaunch the machine.





G

System State Restore

1. If you want to recover the system state, specify the backup version and the exact image file.

٩	Restore Wizard	x
	Restore Source Specify system state you want to restore	CloudberryLab
	Name	Date 7/16/2016 4:57 AM > View in dialog
	< Back N	ext > Cancel





2.	Then,	you	need	to	choose	the	external	drive	to	deploy	the	recovery	data	kit.	
	٢						Resto	ore Wiz	ard						x
					C	estina Spe obje	tion :ify local folde cts	r you war	nt to r	estore the s	elected) Cloudb) Derryl	.ab
						 Res Res 	tore to orig	inal loca cific loca	tion tion						
						De	stination:	:\SystemS	itateT	emp			Bro	owse	
							Save this loca	ation as de	efault	destination	for futu	ire restore			
					1	Ove	rwrite existing) files							
							Restore only	new files							
							Note: files v	vith newe	r date	modified at	tribute (will be restore	Ч		
					S 1	Rest	ore NTFS per	missions							
						No res	te: This optic tored objects	on will be a (files and	applie: folde	d if the back rs)	up cont	ains NTFS per	missions	for	
		5		Q											
		N.								< Back	<	Next >]	ancel	

- 3. After notification and deciphering options setup, check recovery configuration on the Summary screen. Than CloudBerry Backup will download the restoration pack to the external drive.
- 4. Next, launch the Windows Recovery Wizard in the next ways:
 - a. Plug in Windows installation disk and choose to boot from it in the firmware settings, reboot the machine.
 - b. Reboot the computer, press F8 while firmware starts and select Repair Your Computer option.
- 5. The Wizard will start. Proceed its steps to complete the recovery.





Microsoft Exchange Server Restore

1. If you want to recover Microsoft Exchange data, choose **Restore files and folders** option on

the	Туре	ot	Data	step	of	the	Wizard.
٢			Res	tore Wizard			x
			Type of Data Select type of d	ata for restore			(JoudberryLab
			Restore files a	and folders 🛛 👔			
		0.07	O Restore MS 50	QL Server Databa	ase 🥐		
			O Restore MS 50	QL Server backuj	pfiles 👔		
			\bigcirc Restore files f	rom archives 🛛	?		
			○ Restore Imag	e Based Backup	?		
			○ Bare Metal Re	store 🥐			
			O Restore System	em State 🛛 🤋			
	140			[< Back	Next >	Cancel

2. Choose the version of Exchange to recover and proceed to **Restore Source** step, where all data on backup storage exposed. Choose **Exchange Server Instances** and check the files to





9

recover.		
٩	Restore Wizard	X
	Restore Source Specify files and folders you want to restore	Q) CloudberryLab
	<pre> CB-TEST-Exch.cb-lab.local CD-TEST-Exch.cb-lab.local CD-TEST-Exch.cb-lab.local</pre>	
	Synchronize Repository	<u>View in dialog</u>
1000	< Back Next >	Cancel





3.	Specify	the	folder	to	download	the	databases.
	٢			Restor	e Wizard		x
			Destinat i Specil objec	ion fy local folder ts	you want to restore the :	selected	CloudberryLab
			 Rest Rest 	ore to origin ore to speci	al location		
			Dest	tination: D:\	RecoveredData		Browse
			s	Save this locat	ion as default destination) for future resto	re
			Overv	write existing f	iles		
			F F	Restore only n	ew files		
			7	Note: files wi	h newer date modified a	ttribute will be re	stored
			Resto	re NTFS perm e: This option	ssions will be applied if the bac	kup contains NTF	-S permissions for
		Q	reso	orea objects (nies and roiders)		
	10				< Bac	k Next	> Cancel

The Wizard can't restore data to the original folder directly. To recover to the original location, dismount current databases and replace existing files with the restored ones manually. You can do it in a few ways:

a. Login to Exchange Admin Center (EAC) and choose **Servers** in console management tree on the right. Go under **Databases** tab, click on the desired database, press **Three**





Dots	button	above	items	table	and	select	Dism	ount.
Exch	nange admin c	enter						
recipie	ents	serve	rs <mark>databas</mark> e	e <mark>s</mark> database	e availability	groups vii	rtual directo	ories certificates
permis	ssions	+ /	<u>ت</u> ۵ ک					
compl	iance management	NAME	AC			×	STATUS	BAD COPY COUNT
organi	ization	Mailbox	Database CB	Dismour	nt	\oplus	Mount	0
protec	tion	Workin	gDB CB	Dismount	database		Mount	0
mail fl	OW							
mobile	2							
public	folders							
unified	d messaging							
server	S							
hybrid								
	Evchar		Manag	omont	C F		comr	nandi

- b. Use Exchange command: Management Shell Dismount-Database -Identity DBNAME -Confirm:\$False Where **DBNAME** is the name of the database to dismount. It can also dismount all the databases via the next command: Get-MailboxDatabase -Server SERVERNAME | Dismount-Database -Confirm:\$False Where **SERVERNAME** is the name of Exchange instance.
- 4. Finally, specify decryption and notification options. Recovery configuration will be reported on the **Summary** screen.

To mount restored databases, do the next:

- 1. Open EAC and dismount the database instances you want to recover.
- Open the temporary download folder specified in Restore Wizard. There is recovery data kit on the path **%Download Folder Name%/CBB_Exchange/%Your Exchange Instance Name%**. Rename the repository you want to recover, e.g. add the prefix **Restore** to the **%Your Exchange Instance Name%**.

🝷 🏠 🕨 This PC 🕨 Local Disk (D:) 🕨	ExchTemp 🕨 CBB_Exchar	ige 🕨 CB-TEST-Exch.c	b-lab.local 🕨	WorkingDB_Restore 🔸
Name	Date modified	Туре	Size	
퉬 data	7/27/2016 1:01 PM	File folder		
鷆 log	7/27/2016 1:01 PM	File folder		

- 3. Paste data and log folders' contents from recovery data kit to Mailbox/%Your Instance Name% folder in the Exchange directory. Override the existing files.
- 4. To mount the recovered database, do the next:





a. Open EAC, choose **Servers** on the management tree, move under **Databases** tab. Then, select the database, press on the **Three Dots** button and choose **Mount**.

recipients	servers databases data	base availability groups	virtu	ual directo	ories certific
permissions	+/mമെമം				
compliance management	NAME AC		×	STATUS	BAD COPY COUN
organization	Mailbox Database CB 坐 Mo	unt	•	Mount	0
protection	WorkingDB CB	unt uatabăse		Dismo	0
nail flow					
nobile					
public folders					
unified messaging					

 b.
 Use
 Exchange
 Management
 Shell
 command:

 Mount-Database
 -Identity
 DBNAME
 -Confirm:\$False

 Where
 DBNAME is the database name. To mount all the available databases, use the next
 command:

 Get-MailboxDatabase -Server
 SERVERNAME | Mount-Database -Confirm:\$False

Microsoft SQL Server Restore

Microsoft SQL Server Restore option of CloudBerry Backup comes in two variants:

- **Restore Microsoft SQL Server Database** this option restores backed up databases to the active database engine using REPLACE method.
- Restore Microsoft SQL Server backup files this option recovers database files to the specific location.

Restore Microsoft SQL Database

1. If you want to recover the active database server, the Wizard will offer to choose the backup version.





3	Restore Wizard	X
	Restore Type Restore from specified time	(JoudberryLab
	 Latest version Restore the latest version of selected files Point in time Restore selected files to a particular point in time. If there was n given file before this point in time, no file will be restored. Friday , July 15, 2016 Manually Select files and their versions you want to restore manually 	o version of a
	Do not restore files located in Glacier (with GLACIER store If this options is ON files with GLACIER storage class will be skipp restored. If you want these files to be restored switch OFF the of Glacier Smart Restore options on one of the following step Restore options on one of the following step	brage class) bed and not option and specify Cancel

Like in file-level restore, you can select among the latest database version, point in time and manual version management.





Next,	you	need	to	select	SQL	insta	nce	and	authentication	method.	•			
٨					Res	store W	izard			>				
				Select M Selec resto	5 SQL Se t a local M re the dat	r ver Ins 15 SQL Ser abase	tance ver Inst	ance whe	re you want to	(Joudberry	Lab			
				SQL Serv	er Instan	ce:	CB-TES	T-VM			~			
				Authenti	cation:		Window	vs Auther	ntication		~			
				User n	iame:		NT A	UTHORIT	Y\SYSTEM		¥			
				Passw	ord:									
					1.00.1		R	emember •	password	<i>.</i> .				
				le Le	eck if the ave this c	specified	account	has nece to make s	ssary permissions to p ture that specified acco	erform restore				
				ne	ecessary p	ermission	s to peri	orm MS S	QL Server database re	store.				
	X													
	35													
	14							< B	ack Next >	Cancel				
Keen i	n mind	that the	accol	int must	have SC) svsa	dmin	role to	nerform the res	toration To	,			

Keep in mind that the account must have SQL sysadmin role to perform the restoration. Toverify it before proceeding, enable Check if the specified account has necessary permissionstoperformrestoreoption.











4. Then you may specify names for recovered databases, or allow them to overwrite the existing ones. Renamed databases will attach automatically to the server.

ones.	Renamed de	will	uttuen	uutomutic		the	Jerver	
			Restore Wiz	ard				x
		Restore Data Specify na	abases as ames for database	s to restore		CI	(C) oudberry	Lab
		Overwrite	the existing datal	oase (WITH RE	EPLACE)			
		Selected Dat	abase		Restore as			
-		CB-TEST-VM.	master		master-recove	ered		~
-		CB-TEST-VM.	model		model-recover	red		~
		CB-TEST-VM.	msdb		msdb-recover	ed	·	~
	10							
	C P Y							
5								
	ROX			< B	ack N	lext >	Cancel	

5. On the next step, you need to specify data and log file folders. By default, these are the folders of your active database. It's also possible to close connections to Microsoft SQL server





to	avoid	accide	ental	data	corruption	while	recovery.
٨				Rest	ore Wizard		×
			Restore Speci	options fy restore d	atabase options		CloudberryLab
			Data file Log file fi	folder: older:	C:\Program Files\Microsoft C:\Program Files\Microsoft	t SQL Server\MSS t SQL Server\MSS	QL13.M55QL5
			File name	e template:	%DATABASENAME% Note: you can use a %D automatically generate a f name.	ATABASENAME% ille name as a "res	.mdf, .ldf variable to tore as" database
			✓ Close	e existing co	nnections to destination dat	abase	
1					< Bac	k Next >	Cancel

6. To finish the recovery configuration, set up notification and deciphering options. On the Summary screen, you'll see all the enabled tasks and options for restoration.

Restore Microsoft SQL Database Files

1. Firstly, specify the backup version and exact databases for recovery. On the **Restore Options** screen, select the **folder to save the files**. You can also create the file name template and





distribute	the	databases	among	separate	folders.
٨		Rest	ore Wizard		x
		Restore options Specify restore d	atabase options		ی CloudberryLab
		Data file folder:	C:\Program Files\Mid	rosoft SQL Server\MSSQ	L13.MSSQLS
		Log file folder:	C:\Program Files\Mid	rosoft SQL Server\MSSQ	L13.MSSQLS
		File name template:	%DATABASENAME? Note: you can use automatically generation	% a %DATABASENAME% v ate a file name as a "resto	.mdf, .ldf ariable to ore as" database
		Close existing co	nnections to destinati	on database	
10				< Back Next >	Cancel

- 2. On the next steps, adjust notification and decryption options.
- 3. Then, you can attach downloaded databases to Microsoft SQL database engine. See the complete guide on the Microsoft Developers Network page.

Additional Features

CloudBerry Backup provides a number of tools to keep in touch with the backup process and track down modifications made in the system.

History

The History tab contains an overview of a backup and restores operations for a chosen period: last day, last week or last month.





CloudBerry B	ackup Ultim	ate Edition.							- 0
Home Tools									
Gen Art Metal	S SQL Server S Exchange	Cloud to Clou	f Sectors	Make Bootable USB	S fatech Search				
Welcome	Bacha	Pan	Restore Pa	115	Backup Storage	Hatar			
lieve: [Plans] v Back	up / Restore pl	ens: All plans	<u>.</u>		Period: Last	month v			Expert to CS
Nan Name		Files Sc	e Res	a: :::	itart Tinfe	Finish Tiroe	Duation	Message	
) H30322d-858F-4e08-6662	-7Yc2b4c6b429	3 13	568 Suc	cess i	6/22/2016 817	6/22/2016 8:37:02 AM	00:15:43		
17edba78-22c7-4ad7-b4d	4-e0mstatemia	3 13	5 GB 544	CEDO	12/2016 12:59	6/21/2016 1:1845 PM	00.19.08		
Backup Bare Metal / Synte	ern State on 6	4 13	5.68 Suc	cetto (6/21/2016 11:21_	6/21/2016 11:25:20	00:03:58		
adc48414-8711-458d-ae54	-Jae5463collf	3 13	5.68 Suc	cest	/21/2016 10:11	6/21/2016 10:30:40	00:19:06		
System backup		4 13	5.68 Sue	cette 1	6/14/2016 11:36.	6/14/2016 11:41:37	00:05:29		
] 903b413e-d9cd-4585-ad3	b-09c9ef3632	0 0	iybes Fail	ed i	7/2018 9:47.2	6/7/2016 9-47/32 AM	00.00.04	Could not connect to net.tcpu//db-text-vm	
) 983b413e-d9cd-4585-add	b-08c9ef3632	0 0	iytes Fei	ed i	6/7/2016/947:1	6/7/2016 9:47-20 AM	00:00:04	Could not connect to riet.tcp://do-test-vm	
	Commentation and	2.5	C128 - 1923				72.000.000.00		

Here you can see how many files were transferred, how much traffic did it take, and also check a possible failure details. You can also export the data in comma-separated format using the button **Export to CSV**.

Backup Storage Explorer

Under **Backup Storage** tab, you can overview existing storage destinations. At the left, there is a list of cloud buckets previously registered in the CloudBerry client, as well as disks and servers available at

the			WO	rking		instan	ice
Files Home Metal	Tools MS SQL Server MS Exchange	loud to Cloud loud to Local Pestore	Make Bootable USB				
Welcome	Backup Backup Plan	n Restare Pla	Recover Misc Ins Backup Storage	History			
Addition Additi	Cloud Backups ge al / System Stata ener Instances eserver Instances lans		C:	Left :	Interfect I day it hours ago	Disk Izrage	

It has a number of useful features that make data backup experience better.





Block-Level Backup Monitor

If the selected item supports block-level backup, you can also see the list of its full and incremental backups. Click on the item in the management tree on the right (e.g. **Disk Image**) to open the list.

Home	Tools							
Files Bare Metal	Bachup	d Sectore Restore	SB Misc					
Welcome	Backup Plans	Restore Plans	Backup Storage	History				
a 📥 Amazon					Last refreshed I day 4 hours ago			
E - V CE-TEST but N = 10 C N = 20 Archives	ket Cloud Bachups al / System State enver Instances Server Instances Jans	Exclup Type Block Lew Block Lew Block Lew Block Lew Block Lew Block Lew	None E None E Disk 00/987,1 350 PH Disk 00/987,1 350 PH E Disk 00/987,1 350 PH Disk 00/987,1 350 PH Disk 00/987,1 350 PH Disk 00/987,1 350 PH Disk 00/987,1 350 PH	6 8 (4,29,7.06 8 (4,29,7.06 8 (4,29,7.06 8 (4,29,7.06 10 MB	Dote 2166/2016 2/31 PM 2155/2016 3/15 AM 2155/2016 3/22 AM 6322/2016 1/123 AM 7/16/2016 2/21 PM	Size on Storage 6/1 KB 6/15 GB 258 MB 258 MB 237 MB	Compressed Yes Yes Yes Yes Yes Yes	Encrypted No No No No Ne

Manual Data Recovery

At the **Backup Storage** tab you can manually recover files. Just find the file you want to retrieve, rightclick on it and choose **Restore** from the context menu.

Home Tools		
Image: Second	a Cloud a Local Restore Bootable USB Pervent	
Welcome Backup Plans	Restore Plans Backup Storage	History
a Amazon		Last refreshed Lday 4 hours ago
CB-1E31 buckt C CB-1E31 buckt C C My Data Documents My Data C My	Name Chart, brig Chart, htf Char	Las Modify Date Las See See on Stonge 771-4/2066 11:01 AM 1.8 MB 1.8 MB 71152(2066 4-41 AM 0 bytes 0 bytes 71162(2066 4-41 AM 0 bytes 0 bytes 7114/2066 11:02 AM 0 10:0 View Differences Refeash X Delete

Recover Files from Backup Images

It's also possible to recover separate files and folders from the backup images:





1. Switch to Disk Image section, right-click on the desired image and choose File Level Restore.

	Welcome	Backup Plans	Restore Pla	15	Backup	Storage	History						
÷	Amazon						ι	ast refrest	hed 1 day 5 hours ago				
- 19	CB-TEST bucket			Backup T	ype Ner	Del Coloradore			Date	Size on Store	qu.	Conpressed	Encrypted
	8-11 C			Block	Level Did	(MBR): 350 M	0		7/16/2016 2:31 PM	071 KB		Ves	No
	B- □ Users			Block	Level Did	0(MBR): 350 M	0 C:129.7 G0		7/15/2016 3:15 AM	6.15 GB		Ves	No
	E-Can Vitaly			Block	Level Did	(MIR): 350 M	8 C:129.7 GB		7/15/2016 6:22 AM	250 MB		Ves	No
	B- Docum	ents		Block	Level Did	(0(MBR): 350 M	8 C/L29.7 GB		6/21/2016 11:21 AM	249 MB		Ves	No
	–⊡ My ⊛-⊡ SQL	Data Server Management Studio		Full	Die	a qmbr): 31	20 MB		7/16/2016 2:31 PM	237 MB	9	Restore	BI.
	R 🗀 Vita	al Studio 2015								4	3	Restore to Azure	VM Instance
	😸 🌄 Archives										2	Restore to BC2 in	stance
	Cloud to Cloud Ba	ckups								- r	-	File Level Bester	
	🖑 Disk Image 🛶	-										The Level restore	
	- 🎝 Bare Metal / System	m State								1	×	Delete	
	B MSSQL Server Inst	ances											
	🔹 🌉 Exchange Server In	stances											
	- 😚 Backup Plans												
- 8	Trapped mapped												
- 8	🌆 MyDedup												
1.00	A MyDrive 1												

2. This will launch the relevant Wizard, where you can look through image contents. To recover

the	file	or	folder,	right	t-click	on	it	and	select	Restore	to.	
٩					F	ile Level R	estore		- 101 1001 -		- • ×	
B B	HDD: 0 Fixed 3 (350 MB) (350 MB)	0.0 GB AWS 10 GB AWS 12 15 16 16 16 17 10 10 10 10 10 10 10 10 10 10	PVDISK SCSI Disk De		Name booting:	1990. TILU			Date modified 8/22/2013 5:21:0	Size 25KB Restore to		



Press Select Folder button to complete the restoration.





File Difference Monitor

You may also check if there were any item modifications. Right-click on the file, choose **View Difference** from the context menu, and CBB will compare the existing file and the file in the storage facility.

Welcome	Backup Plans	Restore Plan	15	Backup Storage	History		
Amazon Amazon CB-TEST bucket Gr Vitaly Docume Vitaly Docume SQL Global Coloud Bac Oloud Bac Oloud Bac Disk Image Disk Image Disk Image MyDive_1	ents Data Server Management Studio al Studio 2015 Skups In State Inces stances	File: C:\Users' File size: 4 KB Deta changed: Deta to backup: Scale +	Name Chart Chart Chart Chart Photo Report (4430 byte 4 KB 4 KB (4 Scale	backup storage binp tests f binp tests f binp tests f binp test f binp test f binp test f binp test f bin	Last Modify 7/14/2016 1 7/15/2016 4 7/15/2016 4 7/15/2016 3 7/16/2016 3	trefreshed 1 day 5 hours ag Date Last Size 11:03 AM 1.3 MB 4:40 AM 7 bytes 4:41 AM 0 bytes 2:49 PM 4 KB	Size on S 1.3 MB 7 bytes 0 bytes 4 KB
						Close	

Manual Restore to the Virtual Machine

CBB can recover computer images as Azure VM or EC2 virtual machine straight away. Just right-click on the image and pick the desired variant to launch the deployment Wizard (described in **How to Restore – Image-level Restore – Image and Virtual Machine Restore** section). Proceed its steps to complete the recovery.

Welcome Backup Plans	Restore Plans	Backup Storage	History				
🗏 📥 Amazon				Last refreshed 1 day 5 hours ago			
CB-TEST bucket	Backup	Type Name		Date	Size on Storage	Compressed	Encrypted
B-Cal C	- Block	kLevel Disk D(MBR): 35	io MB	7/16/2016 2:31 PM	071.KB	Yes	No
E Uses	- Oloc	k Level Disk D(MDR): 35	0 M0 C(129.7 G0	7/15/2016 3:15 AM	6.15 GB	Yes	No
E Cal Vitaly	- Blod	kLevel Disk 0(MBR): 35	0 MB C(129.7 GB	7/15/2016 6:22 AM	250 MB	Ves	No
B- Documents	Blod	kLevel Disk 0(MBR): 35	0 MB C(1,29.7 GB	6/21/2016 11:21 AM	249 MB	Ves	No
- My Data	Ful	Disk 0(MBR);	350 MB	7/16/2016 2:31 PM	237 HB	No.	81 -
B SQL Server Management Studio					2	Restore	
He Visual Studio 2015						Restore to Azure	VM Instance
E Archives					199 I	Restore to BC2 in	stance
R-Ge Cloud to Cloud Backups						File Level Restore	
					~	Dellate	
are Metal / System State					^	Delete	
MSSQL Server Instances							
Exchange Server Instances							
- 😽 Backup Plans							
* T mapped							
😤 🌆 MyDeclup							
A MyDrive_1							

Email Notifications

CloudBerry Backup can also inform you about the backup progress via email. Notification policy can be configured for each backup plan, but you can also set up global settings in the **Options** menu under







Here you can specify your email as a default option for new backup plans or mount an SMTP server. It's possible to use SSL (Secure Socket Layer) protocol to increase privacy level.

Consistency Check

You can increase the durability of your backup by using the **Consistency Check** feature. It checks the backup storage for file modifications made beyond CloudBerry Backup. Its interface displays under the





Welcome	tab	near	the	stora	ge	accounts	overviews.
S S CloudBerry Backu	ip Ultimate Edition		2-52-39-42-105.us-wert	2.compute.amazonawi.com	- 6 ×		- 0 ×
Files Note Home Tools AMS SOL	Server Coud to Coud ange Coud to Local	Restore Recover	Search Misc				
Welcome	Backup Plans	Restore Plans	Backup Storage	History			
Welcome to CloudBe Backup Ultimate Edi	tion An Use Ref	ew hazorn dispace: D brytes eh Edk satency Chedic N/A Edk	۷	CB-TEST bucket Used space: 15.8 GB Refresh Edit Consistency Check: 7/16/2016 v Run Edit	۷	do-win-best-2 Used space: 0 Refresh E Consistency Chedix M Run E	l bytes
Backup MS SQL Ser	Backup Plan	5					•
 Badup MS Exchang Setup Badup Plan 		ckup Bare Metal / Sys #Run: 7/16/2016 2:01 PM	item State on 6/2	1/2016 11:20:56 AM			
Restore Backup Local Backup		ckup MS SQL Server o t Run: 7/16/2016 2:49 PM	m 7/14/2016 4⊴	21:51 PM			
Ufecycle PolicyRead the help file on		ckup plan on 7/14/20 t Run: 7/16/2016 2:50 PM	016 5:42:11 AM				
Web Access	O Ba	ckup plan on 7/15/20	016 2:37:45 AM				

Press **Run** to see if everything is alright. If the backup data has been deleted or modified, Consistency Check status will change to the warning sign, and the exact consistency differences will display under the **History** tab.

Advanced Solutions

Nowadays, there is a great variety of IT-infrastructure configurations and data types, and its backup often requires sophisticated tools. CloudBerry Backup supports a variety of advanced features that can facilitate such tasks.

Big Data Transfer

Business often generates terabytes of data, which collects dust in the archive. It's easy to keep onsite, but uploading to the cloud storage is a good option that may be issued by network bandwidth. If you have 100TB of data, it may take 120 days to send them to the cloud storage via 100-Mbps channel, which is unaffordable for initial data seeding. In the real life, it would take even longer, because other corporate services also use bandwidth resources.

If you use Amazon Web Services (AWS), it is possible to accelerate data migration. There are a hardware solution **Amazon S3 Snowball** and networking improvement service called **S3 Transfer Acceleration**. CloudBerry Backup support both features, making transfer tasks convenient and efficient.

Amazon Snowball

Amazon Snowball is a hardware solution for an offline data transfer, which can fit up to 80TB of data per device. It connects to the local network via high-speed interfaces, has physical armor-case





protection and strong encryption. You don't need to purchase it – Amazon sends it to your place, and then you transfer it back to the datacenter. Find out details <u>on the official page</u>.

You can request Snowball via AWS Management Console (<u>press here to open the guide</u>) or via the CloudBerry Backup interface. CBB can also manage data import to Snowball device. It works on the file level, so make images and snapshots beforehand and place it on the local storage.

Here is a guide how to manage Snowball Export Job with CBB:

1. To create an export task, start Create Backup Plan Wizard for files, and choose or add Amazon

S3	storage	account	on	which	you	want	to	upload	the	data.	
3	CloudB	erry Backup Ente	erprise Ed	lition							
6.	Home	Tools									
File	s Bare Metal	SQL Server	Cloue Cloue	d to Cloud d to Local	Restore	Make Bootable US8	l Refre	sh			
_		0			Create	e Backup Plan	Wizard				×
	Welcome Backup plan o			Sele	ct Cloud St Select Cloud	orage Storage for your I	Backup or cre	ate a new one	Clou	Q) dberryLab	
•	Backup plan o							4	d Add	New Account	
				5	🖲 s3-ı	nain (Amazon S3	ŋ				





2. On the Plan Name step, choose the "I'd like to use AWS Import / Export feature to make initial backup" option.



- 3. Specify the data for backup and configure other options like file-filter and notifications. *Note:* compression and encryption won't work with Snowball because it uses its own equivalents. Schedule option doesn't make sense either; moreover, it can corrupt the data on the attached Snowball device.
- 4. Continue setting up the plan. Soon enough you'll reach the AWS Snowball step that describes further procedures. Click on the link in step №2 to download Amazon S3 adapter. Once downloaded, unzip it and launch the command line. Navigate to the folder that contains Amazon S3 adapter and execute the following command:







where:

- -a and -s are the access and security keys, respectively.
- -i is the IP address (can be looked up on the box)
- -m and -u are the path to the manifest file and the client unlock code, respectively. Both of these can be found in your AWS Console.

If you've done everything correctly, you should see a message in the terminal akin to "Server up and running on port 8080".

Do not close the command line! It should be running all throughout the process. Now go back to CloudBerry Backup and conclude setting up the backup plan. Upon finishing, run it and wait for it to complete.

When the data has been successfully transferred to the AWS Snowball, ship the box back to Amazon. When they notify you of your data having been moved to your bucket, go ahead and confirm it in CloudBerry Backup. Click on **"Initial backup finished..."**.





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Countery Instage VM Lation		- 0 ×
App Statute Apple Apple <th< th=""><th></th><th></th></th<>		
Websene Earling Flans Review Flans Earling Denige History		
STATS (in Lyter)	C too scheduled	• *
Bechag Bare Weind / System State on W23/3916 7:28-66 AM WEINES File System(🖑 Not scheduled	►
Inclusy Hyper V to Sewidal S 19 Hit Respon S1	(1) Not scheduled	*
Section Constraints and Const		
Backup plan on 10/1/2016 9/2010 AM	🖑 Not scheduled	
Doing Where to feeshall to the present til	🖑 Konschedulet	
Balage Balage Index Index Stabula Databal Index Companies Databal Index Stabal Index Databal Index Companies Databal Index Companies Databal Index Stabal Index Databal Index Stabal Index Databal Index Stabal Index Databal Index		
Beckup Service started		Build 538
# P G 🖯 🛤 🐘 🍓 💁 🕾 🖉 🗰 🎋 🗶 📓 🖉 🖉 🙆		1 4 1 1 Million

Select the Import Job Completed checkbox and click OK.

C Conference Wildow		- 8 ×
Fine Tools		
Applie State State <t< th=""><th></th><th></th></t<>		
Welsome Rating Flans Review Room Rating Disruge History		
A 12 78	C Not streshed	• *
Backup Bern Minis / System State on N/23/2016 3:20-46 AM	🖑 Not scheduled	• *
Backup Hyper-Y to Snowbell Si Miki America 53	(1) Not scheduled	• *
Standage Discoption Comparison Datable Comparison Datable Exception Sol 10 bit		
Rectap plan on 107/2016 928:50 AM	Not scheduled	• *
Si Ilania Viteare la Sendual	() Not scheduled	
Reliep Reliep Value machine should? Release Dashed Dashed Dashed Schwardson Dashed Compension Dashed Recognition Dashed Common Walker Dashed Common Walker Dashed Cased Walker Dashed Market Last Meadu Case: Dashed Namesha Market (Schward) States and soften: July Sea somphytes. Files Opatients H(2) VIII Schward States		
🖉 hall 📋 Delate 🖸 Beslaw Hins, 🚔 Hans Rashap Harappe 👔 Hans Holdary 🕐 Anna Full Rashap 🏢 Caraw Fun		
A Backup Service Iterated		Buld 53.63
# P D C 💼 🐘 % 🧕 🕾 🖉 🛤 🐕 🖉 🖷 🦉 📾		10 40 E THAT VOID

Your files are now being renamed in the cloud. This process takes place because of certain peculiarities of CloudBerry Backup and the way our software works with file structures. Afterward, there is nothing else to be done! Voila! Your initial backup has been successfully performed with the help of AWS Snowball. All future backups will be performed as usual from your PC into the cloud by means of CloudBerry Backup.





NB: Do NOT Sync Repository before the files are all renamed in the cloud. This may lead to unintended repercussions.

AWS S3 Transfer Acceleration

Amazon S3 Transfer Acceleration is a bandwidth speed-up solution, which can make the connection with the data center up to 6 times faster. The acceleration is achieved by using the optimized network routes between Amazon S3 storage facilities and AWS Edge Locations. Find out more information on <u>AWS S3 FAQ page</u>.

1. You can enable Transfer Acceleration for any of S3 buckets registered in CloudBerry Backup by pressing the **Main Menu** button and selecting the relevant account.






CloudBerry Backup Installation and Configuration Guide

2.	On	the co	onfiguration	page,	choose	Advanced	settings	option	
	6)	Amaz	on S3 Ac	count)	c		
	Γ	Amazon 53 Storage	Account Cost	Estimates 0	Consistency Check]			
		Setup A	mazon 53 settin	gs					
		Amazon 53 accou							
		You can <u>impor</u> t	You can import an account from one of CloudBerry products.						
		Display name:	Display name: CB-TEST bucket						
		Use Acce	ss and Secret	keys					
		Access k	ey: AKIAIJXU	JRHYAC6JQJ	QQA				
		Secret ke	ey: *******	****	****	****			
		🔿 Use AWS							
		Applicable							
				_					
		Bucket name:	cb-test-s	3bucket		×			
					<u>Adva</u>	nced settings			
					Speciry H	roxy Settings			
		Don't have an	Amazon 53 a	ccount ?					
		Create an acc	<u>ount</u> – It will tał	æ just a few	minutes!				
	L						1		
					ОК	Cancel			
	-								





3.	Clicl	k or	the	Use	S3	Accelerate	box.	Now	Transfer	Acceler	ration	is	enabled.
	٢				Α	mazon S3 A	ccount	t		x			
	A	mazon	S3 Stora	age Acco	unt	Cost Estimates	Consiste	ency Che	ck				
		~ ~											
		Ĩ	Setu	p Amazo	in S3 s	ettings							
		٢			A	dvanced Se	ttings			x			
				[,			
		Bai	:kup prel :e: The B	fix: CB	i-TEST	-VM elos vou ideotifu	vour dai	ta in the l	bucket Vou				
		can dist	i store ba inquish t	ackups fi hem usir	rom dil na the	ferent computer Backup Prefix, T	's in the : 'he Backı	same buc Jo Prefix	ket and is set to the				
		con	nputer na	ame by c	default								
		Prir	nary reg	ion: Us	5 East	(Northern Virgini	a)		¥				
		✓	Use SSL										
			GovClou	Jd A I									
			Use 53 i	Accelera	te								
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							0	<	Cancel				
		Cn	ne nave eate an a	an An	- It v	vill take just a fev	w minute:	s!					
						·							
								01/					
								OK		ncei			

You can switch it off in the CBB Account options or via Amazon Management Console.

Archive to Glacier and Lifecycle Policies

If you use AWS services, you can make a profit of storing the archive data on the Amazon Glacier. It's a low-cost storage for infrequently accessed data. The point is that one cannot access data on Glacier immediately – it may take 3-5 hours to create the link. The data can automatically move to Glacier from other AWS facilities according Lifecycle Policies. Find out more about this feature on the AWS page.

CloudBerry Backup supports native AWS Lifecycle Policies feature, so CBB settings won't conflict with Amazon Management Console presets. It's also possible to upload data directly to the Glacier.





How to Configure Lifecycle Policies

Here is a guide on transferring data to Amazon Glacier using CloudBerry Backup user interface:

1. Go to the **Tools** menu and click **Lifecycle Policy** or use the same option on the left panel.



2. Use Lifecycle Policy dialog window to choose data to be automatically uploaded to Amazon Glacier. It is possible to specify transition timeouts for each item and choose source data to be transferred to Amazon IA storage first (here is the <u>article about Amazon storage classes</u>).





٨	Lifecycle Policy	x					
3	You can reduce storage costs for your S3 accounts. Folders checked the list below will be archived to <u>Amazon Glacier</u> automatically. Also, Standard-Infrequent Access Storage Class can be applied to these folders.	in					
	Note: Although storage costs are much lower for Glacier and Standard-Infrequent Access Storage Class, file restores may cost much more than with S3.						
Accoun	t: 😚 CB-TEST bucket	~					
	CB-TEST-VM WIN7-VIRTUAL CBB_Configuration (transition to Glacier in 40 day(s)) CBB_Configuration (transition to Glacier in 40 day(s))						
Note: Rig	Note: Right-click on a checked node to modify transition days.						
Show o	custom paths						
	OK Cancel						

After completion of the transfer operation, the backups will appear in the Archives section. From Amazon AWS control panel perspective, the data transferred are not displayed in Glacier storage, but it is still available in the S3 bucket.

Backup to Glacier

You can also set up Glacier as a standard CloudBerry Backup storage:













3. On the next step, specify the AWS account credentials and select the Glacier vault.







a. If you don't have a vault yet, you can create a new one from CBB interface. Press on **Create New Vault** and choose its name and location region.

٥	Create Vault
Vault name:	cloudberrybackup_CB-TEST-VM
Region:	US East (Northern Virginia) 🗸 🗸
Note: Vaul nam vaul	It name was generated automatically. You can specify another ie. It is recomended to put each computer backup into unique It.
	OK Cancel

- 4. If you have made backups to this vault before, it will take 3-5 hours to synchronize repositories. If no, the Glacier account will appear immediately, and you are ready to create a Backup Plan.
- 5. Press **Setup Backup Plan** at the **Welcome** tab to start the Wizard. Choose Glacier account as a cloud storage and specify the backup plan name.

9	Create Backup Plan Wizard	×
	Select Cloud Storage Select Cloud Storage for your Backup or create a new one	CloudberryLab
	(Amazon 53)	Add New Account
	CB-test-Glacier (Amazon Glacier)	
	Amazon (Amazon Cloud Drive) Image: Construction Server Image: Construction Server	
	 mapped (File System) MyDrive_1 (OneDrive) 	
	< Back	Next > Cancel





6. On the next step, choose the backup mode. On the **Regular Mode**, files will be uploaded separately. On the **Archive Mode**, data will be compressed in the one file to save on requests charge.







CloudBerry Backup Installation and Configuration Guide



8. Configure others options like encryption, compression, e-mail notifications, etc., and launch the backup plan to upload the data to Glacier.

Glacier Restore

If Glacier storage hasn't been used for backup on the computer before, or its contents changed since the last backup, you need to synchronize it with local repository:







2. Click on the **Synchronize Repository** button. On the next screen, choose the Glacier Account from the drop-down list and press **Synchronize Now**. *Note: If you have made uploads during the*





last 24 hours, the Glacier Global inventory may not occur and files may n	ot be	available.
Synchronize Repository		
Note: This feature should only be use in emergency cases. If you are not sure do not use it. This dialog helps synchronize backup settings between cloud storage and the local computer. Please contact <u>support@cloudberrylab.com</u> for more details.		
Account: CB-test-Glacier (Last synch was on 7/17/2016 1:50:55 PM) Amazon (Last synch was on 4/13/2016 3:19:55 PM) AzureVM account (Last synch was on 6/21/2016 10:01:51 AM) CB-TEST bucket (Last synch was on 7/16/2016 4:44:37 PM) CB-test-Glacier (Last synch was on 7/17/2016 1:50:55 PM)		
MyDedup (Last synch was on 4/12/2016 4:29:24 AM) MyDedup (Last synch was on 5/16/2016 10:02:36 AM) MyDrive_1 (Last synch was on 7/15/2016 3:13:36 AM)		
Close		

If the data is already synchronized, you can start the recovery. Click **Restore** at the **Home** tab. This will start the Recovery Wizard.

Glacier retrieval options

Formerly, if you wanted to retrieve your files from Amazon Glacier, the only way you could do so is via the so-called Standard retrieval. Well, not anymore. Amazon has introduced 2 new tiers:

- **Expedited**: for those who are willing to spend a little more for higher speeds. You can get you data in as little as 1 to 5 minutes. Retrievals cost \$0.03 per GB and \$0.01 per request. Note that there are some provisions that may impede smooth restoration. If you need to get your data back in this time frame even in rare situations where demand is exceptionally high, you can provision retrieval capacity. Once you have done this, all Expedited retrievals will automatically be served via your Provisioned capacity. Each unit of Provisioned capacity costs \$100 per month and ensures that you can perform at least 3 Expedited Retrievals every 5 minutes, with up to 150 MB/second of retrieval throughput. If you exceed that limit, expect errors on the part of Amazon.
- **Bulk**: for those who want to limit expenses by sacrificing access time. It is perfect for planned or non-urgent cases, with retrieval taking anywhere from 5 to 12 hours at a cost of \$0.0025 per GB and every 1000 requests amounting to \$0.025.





The **Standard** tier with your typical retrieval hours (3 to 5) also remains, costing \$0.01 per GB along with \$0.05 for every 1,000 requests.

CloudBerry Backup 5.3 or newer allows you to select the preferable retrieval tier when setting up a restore plan.

Restore Wizard	Receipter of the second	23
	Glacier Smart Restore Reduce or eliminate your retrieval fees from AWS Glacier	(JoudberryLab
	This option is applied ONLY to files stored in <u>Amazon Glacier</u> of with GLACIER storage class.	or Amazon S3 files
	Retrieval type: Standard 🔹	
	More information	
22		
The	<back next<="" td=""><td>> Cancel</td></back>	> Cancel

By default, the Standard tier is used to retrieve data. So if you don't explicitly specify the tier, expect the Standard fees and retrieval waiting time.

CloudBerry Backup Advanced Options

CBB has some features which can resolve specific cloud storage issues. They can be found on the **Advanced** tab of the **Options** window.





Options ×								
General Connection Bandwidth Proxy Notification Retention Policy								
Logging Repository Advanced								
Setup advanced options								
Chunk size: 10 🔨 MB								
Specifies the chunk size of a file that will be uploaded to cloud storage. Chunk size must be between 5 MB and 5 GB								
Thread count: 6								
Specifies how many threads will be used for one backup plan.								
Process priority: [Normal] General Process Priority 🗸 🗸								
Specifies the priority for backup plan process.								
Prevent computer from sleeping while plan is running								
Temporary folder: C:\ProgramData\CloudBerryLab\CloudBerry Bacl								
Specify path where temporary stored backups of databases before uploading to the cloud storage.								
Clear archive attribute during backup								
OK Cancel Apply								

Multipart Upload

This feature breaks big files into the smaller chunks before uploading and then assembles them on the destination storage. This feature allows to:

- Ignore network errors and re-upload corrupted parts.
- Transfer data in multiple threads to increase the upload speed.
- Stop and start the upload at the Backup Plans tab.

At the **Advanced** tab, you can select the chunk size and specify number of threads. The bigger chunk size increases transmission speed, but it will take more time to continue interrupted transfer task.

Process priority:	[Normal] General Process Priority
Specifies the pric	[High] Setting it to High priority [AboveNormal] Setting it above Normal priority
Prevent compution	[Normal] General Process Priority [BelowNormal] Setting it above Low, but below Normal [Low] Setting it to Low priority

You can also assign CloudBerry Backup process priority to manage performance.





Clear Archive Bit

The Archive Bit (ArB) is a file attribute that is set when a file is created or modified. It basically indicates whether the file is a new one or modified, so the system can decide to archive it or just skip.

Let's look at an example:

- You create a new file. The Archive Bit attribute is automatically set for this file.
- A daily backup schedule starts from Monday. It performs a full backup, and it completes successfully. The ArB is turned off.
- If here were no file modifications on Tuesday, CBB incremental backup skips this file since the ArB turned off.
- You modify the file on Wednesday. The ArB automatically turns on again.
- Incremental backup starts on Wednesday. CBB backs up the modified file and turns off the ArB attribute.
- The ArB will stay turned off and CBB will skip the file until you modify it again.

It is possible to **clear archive attribute during backup** by checking the relevant box at the Advanced tab. The option may be useful if you have re-deployed CBB on the machine, and there were file modifications in between.

Command Line Interface

CloudBerry Backup has a command line interface, which can manage all backup or restore features. It may also be used in Pre/Post Actions in backup plans, or by external software. The interface tool is **cbb.exe**, which is located in the CloudBerry Backup root folder. By default, it's **C:\Program** Files\CloudBerryLab\CloudBerry Backup.

Here are some examples of CloudBerry Backup CLI usage:

• **Configure global settings**. For instance, run the next command to set bandwidth speed to 100Kbit/sec:

cbb.exe -o -bw 100

 Create a backup plan using the next command:
 cbb.exe backup -a myStorage -f "C:\Users\Administrator\Documents\Image.bmp" -d "C:\Users\Administrator\Documents\Data" -ifm "*.rtf;*.bmp"

CBB perform a one-time backup of **image.bmp** in **Administrator\Documents** and save all **.rtf** and **.bmp** files from the **\Data** folder to **myStorage** account. The backup process will be tracked in the Command Line.

• **Recover data.** Run the following command:

cbb.exe restore -a "myStorage" -d "C:\Users\Administrator\Documents -rl original -rt latest -o





All files assigned to the **Documents** folder will be restored to their original location overwriting the existing files if any.

Full commands list and advanced scenarios can be found on the Command Line Interface page.

How to Recover Jobs and Presets on the New Server

When the disaster happens, first step is the hardware renewal. Whether you get new computers or choose cloud services, the next thing is the restoration of backup service and data recovery. There should be some precautions made before:

1. Each Backup Plan should be created with the **Save backup plan configuration to the backup storage** option enabled. It won't take much storage space and helps to restore task configuration even if the initial machine is lost.

0			
٩	Create Backu	ıp Plan Wizard	x
	Plan Name Specify a plan name		(CloudberryLab
	Plan name: 3ackup) plan on 7/18/2016 6:09:04 AM	
	I'd like to use <u>AWS</u> Note: Your data w backup). Your data the plan status on t used for the initial t	<u>Import / Export</u> feature to make initial ba vill be copied to snowball or portable storag will be uploaded to the Amazon S3 storag the Backup Plan tab. Compression and enc backup.	ckup ge device (i.e. initial e. You can monitor ryption will not be
	Save backup plan Note: If your plan security reason. Yo	configuration to the backup storage has encryption, the encryption password u will have to specify the encryption passw	e will not be stored by word during restore.
100		< Back Next >	Cancel





2. Preserve CBB settings to facilitate the recovery by pressing on **Export Configuration** button at

the		1	Fools		tab.
🏐 🎉 CloudB	erry Backup U	Itimate Edition			
👌 🔻 Home	Tools				
Options Networ Credenti	c Diagnostic	GLifecycle Policy P Change Service Account	🌐 Language 🕶	Import Configuration Export Configuration	3
		Settings		Import/Export	
Welcome	В	ackup Plans Re	store Plans	Backup Storage	History

3. On the window appeared, choose plans to be saved and specify export location. You may create a backup task for configurations file to recover it easier later.

٩	Export Configuration 🛛 🗙						
Please specify backup plans that will be exported to zip file.							
Backup (plans:						
	Consistency check plan for CB-TEST bucket						
	Consistency check plan for mapped						
	Consistency check plan for MyDedup						
	Consistency check plan for MyDrive_1						
	System Dackup						
🗌 Rem	nove encryption passwords (should be specified during import)						
Export	to: C:\Users\Vitaly\Documents\Configuration_20160718062456.cbbconfi						
	Export Close						

After all preparations are made, move to the new instance and proceed the following steps:

1. First of all, release the license to continue it on the new instance. You may <u>contact the support</u> to create a request or do it by yourself if the previous machine still accessible. Click on the





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Aain Menu	button, c	hoose Hel	b section		10.000	mene	ase	Licens	е.
🔊 i 🤤 i CloudBer	ту васкир онит								
Add New Accou	unt	Contents			Almport Co	onfiguratio onfiguratio	on on		
Edit Accounts	Q	CloudBerry Lab We	bsite		Import,	/Export			
🔶 Import Configu	ration	Web Access			Backup Sto	rage		History	/
📂 Export Configur	ration	Check For Updates				W	CB-TE	EST bud	ket
Options		Send Feedback	_			•	Used sp Refresh	ace:	15.8 GB Edit
Help		Release License					Run	shey check:	Edit
Exit	1	About	_	y	stem Stat	e on 6/	21/20	16 11:2	20:56 AN
stall CloudBer	ry Backup.	On the firs	st run, spe	ecify lia	on 7/14/: cense ke	2016 4 ey or	:21:51 start	PM a tria	al.
stall CloudBer Activate Prod	ry Backup. uct	On the firs	st run, spe	ecify lia	on 7/14/: cense ke	2016 4 :y or	:21:51 start	PM a tria	al.
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Next

BUY ONLINE



3. Click on the Main Menu button and select Add Account. Choose the same bucket and display

name	as	before	and	specity	security
Amazo	on S3 Accou	nt			×
Amazon	S3 Storage A	count Cost Est	imates Consis	stency Check	
9	Setup Ama	azon S3 settings			
Amazo	n S3 account				
You	i can <u>import</u> a	an account from (one of CloudB	erry products.	
Disp	olay name:	CB-test-S3 F	Restore		
۲	Use Access	and Secret key	/5		
	Access key	AKIAIJXURH	IYAC6JQJQQA		
	Secret key:	*******	*******	******	***
0	Use AWS IA	M role policy			
	Applicable if	you run applicat	ion on AWS E	2 instance	
Buc	:ket name:	<specify bu<="" th=""><th>cket></th><th></th><th></th></specify>	cket>		
		<create net<="" td=""><td>w Bucket></td><td></td><td></td></create>	w Bucket>		
		cb-test-s3bu	ıcket		
		my-private-	btest		_
Dor	n't have an 🖌	Amazon 53 acco	ount ? ust a few minut	es!	
		- ·			
				ОК	Cancel

- 4. There are three ways to restore jobs and presets on the new computer:
 - a. After pressing **OK** while renewing the account, CloudBerry will scan the storage for previous backups. If there is one, CBB will ask if you want to recover another



credentials.



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computer.	Select	the	previous	machine	from	the	drop-down	list.	
Amazon S3 Account									
We detected backup from another computer in selected storage. Please choose one of the options below.									
Backup this computer									
	Select this backup loo	option i ation.	f you just want	to backup this	computer	to a nev	v		
	Recover	anothe	er computer						
	Select this option if you are going to restore backup from another computer (after a crash for example).								
	Computer	:	CB-TEST-EXCH	4			-		
Don't :	show this dia	log next	CB-TEST-EXCH CB-TEST-VM WIN7-VIRTUA	ł L					
				Oł		Cance	1		
Don't have an Amazon S3 account ? Create an account - It will take just a few minutes!									
					ОК	Can	icel		

b. If the previous step missed, assign CBB to the previous computer via Backup Prefix.
 Press Edit Account in the Main Menu, choose the Advanced Settings option and specify the backup prefix of the desired computer. There is a drop-down list with existed prefixes on the storage too.

6	Advanced Set	tings	x
ſ			
	Backup prefix:	PC	-
	Note: The Backu	CB-TEST-EXCH CB-TEST-VM	
	distinguish them	WIN7-VIRTUAL	
	computer name t	oy default.	
	Primary region:	US East (Northern Virginia)	-
	V Use SSL		
	GovCloud		
	Use S3 Accel	erate	
1			
		OK Can	cel





c. You can also recover backup jobs and presets by renewing the configurations. Choose the **Import Configuration** at the **Tools** tab and specify the **.cbbconfiguration** file.

Import Configuration
Settings and backup plans will be imported from configuration zip file.
Import from: top\Configuration_20160718070206.cbbconfiguration
Note: your settings and backup plans will be overwritten from selected configuration archive
Import Close

5. If used backup-prefix restoration, synchronize with the storage facility and renew backup plans by opening the **Backup Storage** tab and pressing **Refresh** button.

	Rathar	Lecioud to Local	Restore	Make Bootable USB	Search Idea					
Welcons	w Back	up Plans	Bastore Plan	TR	Backup Storage	ristory				
								No backup files found (click %	effective to update p	(ages
					Backup Type		Date	Size on Storage	Compressed	Encrypted

6. This displays the list of the storage contents. Choose Backup Plans section and right-click on

the	desire	ed	plai	٦,	press		Restore.	
Home	Teels							
Files Bana Metal	MS SQL Server Could to Cloud MS Exchange Cloud to Local	Restore Nake Bootable USB	Search					
	Beckup	Recover	Misc					
Welcame	Backup Plane	Restore Plans	Backup Storage	History				
φ- Δα Ο						Last refreshe	144 second ago	
Claudito Clo	ud Rachuros		Name	*	Last Modify Date	Last Size	Size on Storage	
- 1 Disk Image	aa bacodo		Badup MS SQL	Server on 7/14/2016 4:21:51 PM	14.07.2016 29:28	n/a	418	
Bare Metal / S MSSQL Serve	System State v Instances		 Bedrup plan on Deduplication R 	7/14/2016 5:42:11 AM episitory Backup Plan	22.05.2016 11:53	n/a n/a	412 318 🧐 Restore	
🗵 🋐 Exchange Ser	verInstances						😓 Refresh	
- 🤫 Backup Plans	-						× Delete	





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- 7. Then choose Restore selected plan and common console settings.
 Restore Backup Plan
 Restore selected backup plan only
 Restore selected plan and common console settings
 Restore selected plan and common console settings
 Restore selected plan and common console settings
 Restore Cancel
- 8. Now plans are active at the **Backup Plans** tab. If you have specified the dissimilar name for the storage account, attach the plan to the storage manually by clicking on the **Edit Backup Plan** option.



Troubleshooting

If something goes wrong with the CloudBerry Backup, we will do our best to help you. On the <u>Customer Support page</u>, you can find frequently asked questions, read about the common issues or create a support ticket.

You can also contact us immediately within CBB interface in a few ways:





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- 1. Open Tools Diagnostic the click the button. tab and on | CloudBerry Backup Ultimate Edition a | G **a** 7 Home Tools 🌐 Language 🔹 A Import Configuration Lifecycle Policy -<u>_</u> 0 🎯 Change Service Account Export Configuration Options Network Diagnostic Credentials Settings Import/Export Welcome Backup Plans Restore Plans Backup Storage History
- 2. Press **Report an issue** in the **Last Result** line of the failed backup plan.

Backup	Disk Inage backup: Deik Opterigi: 550 MB C-1, 29.7 GB	
Scheduler	Disabled Enable	
Current Status: Last Run: Last Result:	Not started 70552016 3 (24 AM Currented Figure 1 animum	
Files Uploaded:	2 (858 NB)	
Backup Durations	40 seconds	
Edd Barding Plan Databa Ba	the Rest Electronic State Sector Constant	

3. Open CBB **Options** and go to the Logging tab. Here you can set up logging level (not recommended to change without a need). Press **View diagnostic log** to contact the support.





All these actions will open the Diagnostic window, where you can describe a problem and send logs to

the	CloudBerry	Lab	Support	Team
٢	Diagnostic	_ □ ×		
Send	us this diagnostic information in case of trouble			
Name*:	CB-user			
Email*:	cbtest@cloudberry.com			
Ticket:	please fill if you have one			
Please enter th	he problem description here (limited to 4000 charac	ters):		
		<u>^</u>		
The log file will	automatically be cent to us and a support ticket w			
support staff v	will contact you shortly.	i be created, Our		
Open in Folder	-			
	Send to Supp	ort Close		
		±		

Summary

Now you are aware of all fundamental features of CloudBerry Backup and know the basics of backing up to the cloud. To find out more, you may want to visit these resources:

- <u>CloudBerry Lab Blog</u>, where we introduce new features, publish guidelines and analyze cloud services market.
- <u>CloudBerry Backup FAQ</u>, where you can find the solution of typical issues.
- <u>Customer success stories</u> about CloudBerry Backup implementation.
- <u>Videos page</u> with guides and reviews.

If you still have questions left, don't hesitate to <u>contact us</u>! CloudBerry Backup is a ripe product for business tasks, but we still develop new features to keep pace with storage providers and customer demands.



