

Автоматизируем бэкап





MIKROTIK NINJA

ИНТЕГРАЦИЯ • НАСТРОЙКА • ОБУЧЕНИЕ

**Бубнов
Дмитрий**



/bubnovd



/bubnovdnet



/bubnovdnet



bubnovd.net

#SYSADMINKA

Make sysadmins great again



/sysadminka



/event137391313



/groups/sysadminka/



/sysadminka



sysadminka.org

О чем доклад

- Виды бэкапов в RouterOS
- Автоматизация бэкапов средствами RouterOS
- Обзор систем автоматического бэкапа
- Личный опыт

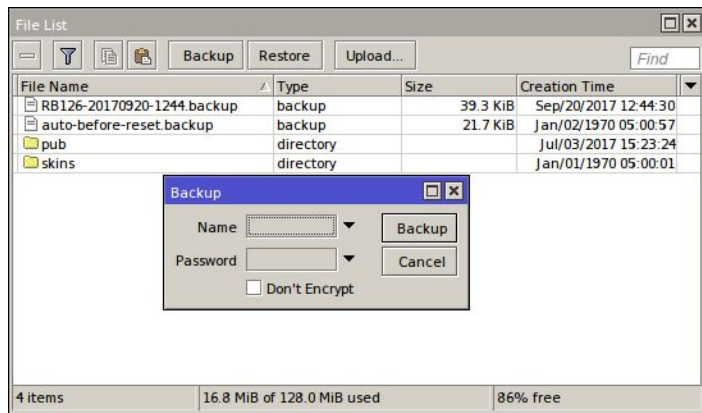


Бэкап. Как много в этом слове...



В RouterOS два типа бэкапа

Бинарный



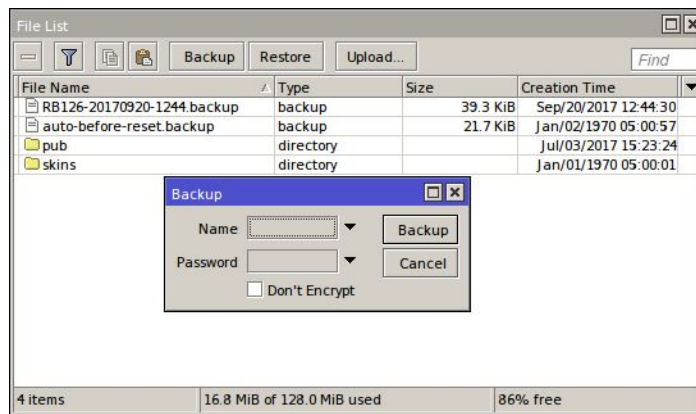
Текстовый

```
[bubnov@RB126] > export
compact file hide-sensitive verbose
[bubnov@RB126] > export
# sep/20/2017 12:45:38 by RouterOS 6.39.2
# software id = 6TX3-6IBX
#
/interface bridge
add admin-mac=4C:5E:0C:5E:D6:5B auto-mac=no fast-forward=no name=bridgeCAP1
/interface ethernet
set [ find default-name=ether1 ] comment=rrrr name=ether1-gateway
set [ find default-name=ether2 ] disabled=yes name=ether2-master-local
set [ find default-name=ether3 ] disabled=yes master-port=ether2-master-local \
name=ether3-slave-local
set [ find default-name=ether4 ] disabled=yes master-port=ether2-master-local \
name=ether4-slave-local
set [ find default-name=ether5 ] disabled=yes master-port=ether2-master-local \
name=ether5-slave-local
/interface wireless
```



Бинарный

- /system backup save
- Сохраняет конфигурацию полностью, включая пользователей
- Разворачивается ТОЛЬКО на такое же оборудование
- Шифруется

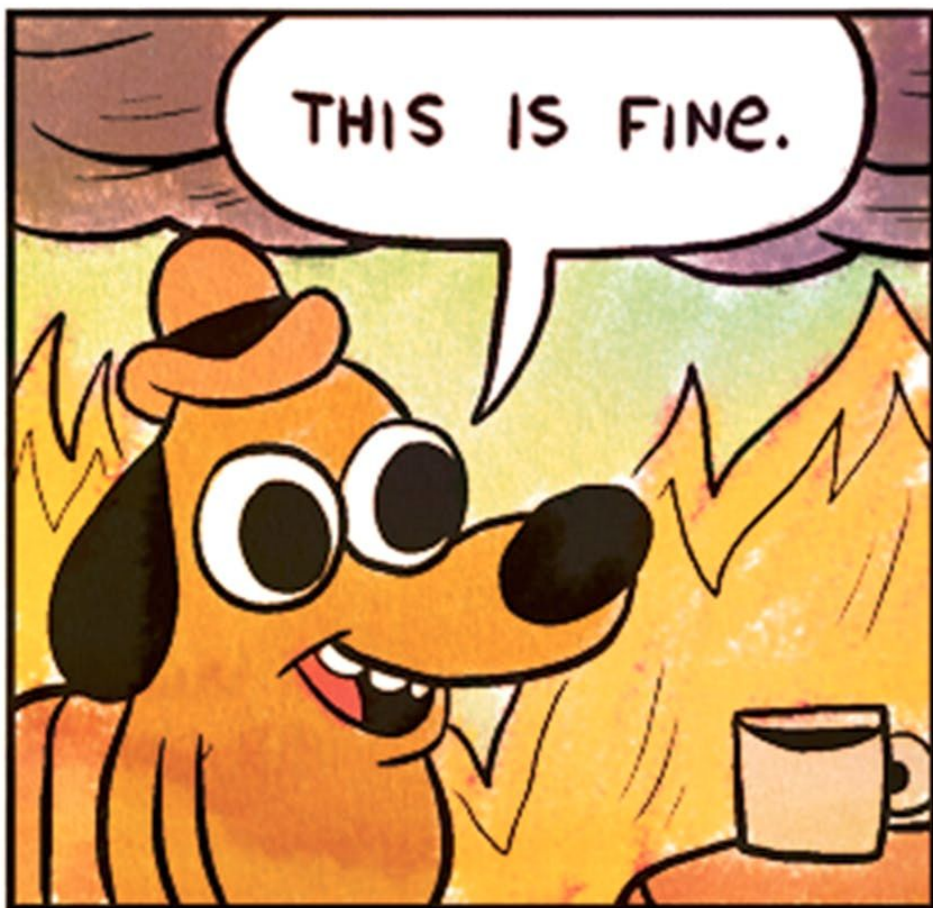


Текстовый

- Export file=backup.rsc
- Не сохраняет список пользователей RouterOS
- Содержит информацию о настройках, отличных от default configuration
- Для выгрузки полной конфигурации применяйте verbose
- Скрыть важную информацию (ключи шифрования, пароли VPN) hide-sensitive
- Часто требуется обработка напильником

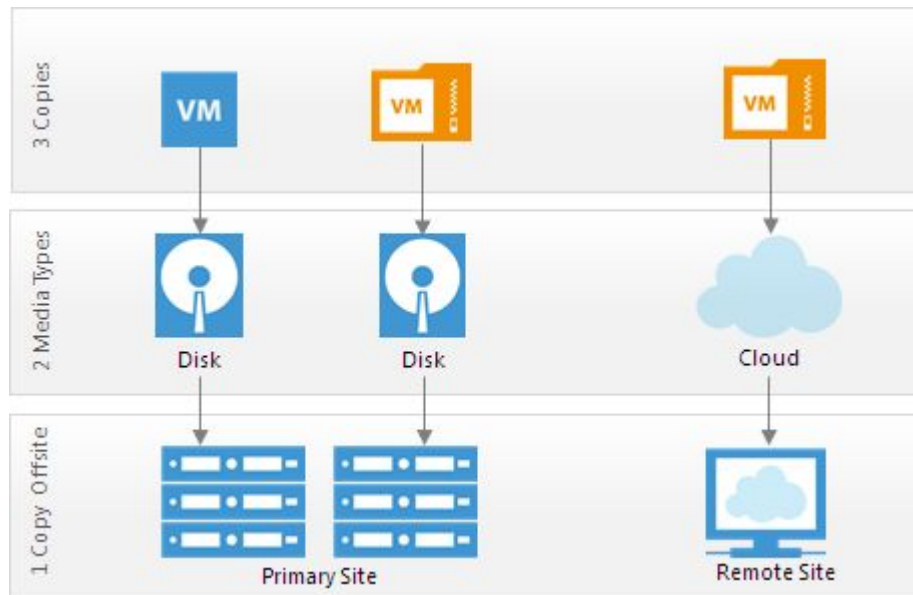
```
Terminal
[bubnov@RB126] > export
compact file hide-sensitive verbose
[bubnov@RB126] > export
# sep/20/2017 12:45:38 by RouterOS 6.39.2
# software id = 6TX3-6IBX
#
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add admin-mac=4C:5E:0C:5E:D6:5B auto-mac=no fast-forward=no name=bridgeCAP1
/interface ethernet
set [ find default-name=ether1 ] comment=rrrr name=ether1-gateway
set [ find default-name=ether2 ] disabled=yes name=ether2-master-local
set [ find default-name=ether3 ] disabled=yes master-port=ether2-master-local \
name=ether3-slave-local
set [ find default-name=ether4 ] disabled=yes master-port=ether2-master-local \
name=ether4-slave-local
set [ find default-name=ether5 ] disabled=yes master-port=ether2-master-local \
name=ether5-slave-local
/interface wireless
```





THIS IS FINE.


Правило 3-2-1




Отправьте бэкап себе на почту

	mikrotik@u-dengi.biz	RB222 Setup Script Backup (sep/20/2017)	RB222 Setup Script file see in attachment. RouterOS version: 6.36.4 Time and Date stamp: 02:22:14 sep/20/2017		00:22
	mikrotik@u-dengi.biz	RB222 Full Backup (sep/20/2017)	RB222 full Backup file see in attachment. RouterOS version: 6.36.4 Time and Date stamp: 02:22:06 sep/20/2017		00:22
	mikrotik@u-dengi.biz	RB131 Setup Script Backup (sep/20/2017)	RB131 Setup Script file see in attachment. RouterOS version: 6.37.1 Time and Date stamp: 01:31:14 sep/20/2017		19 сен
	mikrotik@u-dengi.biz	RB131 Full Backup (sep/20/2017)	RB131 full Backup file see in attachment. RouterOS version: 6.37.1 Time and Date stamp: 01:31:07 sep/20/2017		19 сен
	mikrotik@u-dengi.biz	RB122 Setup Script Backup (sep/20/2017)	RB122 Setup Script file see in attachment. RouterOS version: 6.38.7 Time and Date stamp: 01:22:18 sep/20/2017		19 сен
	mikrotik@u-dengi.biz	RB122 Full Backup (sep/20/2017)	RB122 full Backup file see in attachment. RouterOS version: 6.38.7 Time and Date stamp: 01:22:09 sep/20/2017		19 сен

RB222 Setup Script Backup (sep/20/2017)

 **mikrotik@u-dengi.biz** mikrotik@u-dengi.biz
Вам ▾

RB222-backup-2017sep20.rsc 

RSC

RB222 Setup Script file see in [attachment](#).
RouterOS version: 6.36.4
Time and Date stamp: 02:22:14 sep/20/2017



Каждый бэкапит как может

https://mum.mikrotik.com//presentations/ID09/5_Herry_MUM2009ID.pdf

<https://sysalex.com/2015/02/sozdanie-rezervnyh-kopij-mikrotik/>

https://mum.mikrotik.com/presentations/US17/presentation_4529_14968_42532.pdf



Unimus

- Версии под разные ОС
- Хранит конфиги в файлах или MySQL, PostgreSQL
- Уведомления: email, pushover, slack
- Интеграция с LibreNMS




Unimus



 Dashboard

 Devices

 Backups

SEARCH

 Config search

IMPORT

 Basic import

 NMS sync

Devices

Backup now

Multi device diff

Address	Description	Vendor
192.168.74.161	RB740142	MikroTik
192.168.38.31	sw31	Unknown

Backups

Diff

Download

Send

Create time	Backup type
Thu, 5 Oct 2017, 07:26 PM	Text
Thu, 5 Oct 2017, 07:18 PM	Text



Unimus

Europe - €

Devices	Total price	Price per device
10	44 €	4.4 €
100	390 €	3.9 €
1000	3400 €	3.4 €

Please note addition VAT might apply to EU purchases.
(in accordance to tax laws in the EU member states)

Rest of the world - \$ (USD)

Devices	Total price	Price per device
10	\$49	\$4.9
100	\$450	\$4.5
1000	\$3900	\$3.9



Oxidized

- То же, что и Unimus, но бесплатно
- Поддерживает 91 ОС, у Unimus - 58
- Есть опция hide-sensitive для всех ОС
- Есть хуки для выполнения команд по результатам бэкапа



Oxidized

- Данные об устройствах из CSV, SQLite, MySQL, HTTP
- Вывод в git, git-crypt, file, http
- Миграция из RANCID



nodes /

Show / hide columns Refresh Reload

show 50 entries

Search:

Name	Model	Group	Last Status	Last Update	Actions
RB123	RouterOS	default	■	2017-10-10 10:35:18 UTC	
RB126	RouterOS	default	■	2017-10-10 10:35:19 UTC	
RB127	RouterOS	default	■	2017-10-10 10:35:22 UTC	
RB128	RouterOS	default	■	2017-10-10 10:35:24 UTC	
sw11	Dlink	default	■	2017-10-10 10:37:27 UTC	
sw12	Dlink	default	■	2017-10-10 10:37:45 UTC	
sw13	Dlink	default	■	2017-10-10 10:39:45 UTC	
sw31	Dlink	default	■	2017-10-10 10:41:44 UTC	
sw32	Dlink	default	■	2017-10-10 10:43:21 UTC	
sw34	Dlink	default	■	2017-10-10 10:44:59 UTC	
sw43	Dlink	default	■	2017-10-10 10:45:07 UTC	
sw44	Dlink	default	■	2017-10-10 10:47:20 UTC	
sw45	Dlink	default	■	2017-10-10 10:49:20 UTC	
sw51	Dlink	default	■	2017-10-10 10:51:22 UTC	
sw52	Dlink	default	■	2017-10-10 10:53:30 UTC	
sw53	Dlink	default	■	2017-10-10 10:55:36 UTC	

showing 1 to 16 of 16 entries



nodes / stats

Show / hide columns

show 50 entries

Search:

Name	Total Failures	Failure Rate	Average Run Time	Node Statistics		Last Update	Last Failure
				Last Status			
RB123	0	0.00%	1.74s	■		2017-10-10 10:35:18 UTC	never
RB126	0	0.00%	1.72s	■		2017-10-10 10:35:19 UTC	never
RB127	0	0.00%	1.79s	■		2017-10-10 10:35:22 UTC	never
RB128	0	0.00%	2.37s	■		2017-10-10 10:35:24 UTC	never
sw11	0	0.00%	122.72s	■		2017-10-10 10:37:27 UTC	never
sw12	4	100.00%	4.15s	■		never	2017-10-10 10:37:45 UTC
sw13	0	0.00%	119.39s	■		2017-10-10 10:39:45 UTC	never
sw31	0	0.00%	117.82s	■		2017-10-10 10:41:44 UTC	never
sw32	0	0.00%	97.26s	■		2017-10-10 10:43:21 UTC	never
sw34	0	0.00%	96.71s	■		2017-10-10 10:44:59 UTC	never
sw43	0	0.00%	8.09s	■		2017-10-10 10:45:07 UTC	never
sw44	0	0.00%	132.48s	■		2017-10-10 10:47:20 UTC	never
sw45	0	0.00%	118.94s	■		2017-10-10 10:49:20 UTC	never
sw51	0	0.00%	122.12s	■		2017-10-10 10:51:22 UTC	never
sw52	0	0.00%	126.79s	■		2017-10-10 10:53:30 UTC	never
sw53	0	0.00%	125.47s	■		2017-10-10 10:55:36 UTC	never

showing 1 to 16 of 16 entries



[nodes](#) / Versions for Node

Show / hide columns

Search:

show entries

Version	Dates	Actions
12	25 min 1 sec ago	 
11	55 min 56 sec ago	 
10	1 hours 7 min ago	 
9	1 hours 16 min ago	 
8	1 hours 27 min ago	 
7	1 hours 37 min ago	 
6	1 hours 50 min ago	 
5	2 hours 43 min ago	 
4	3 hours 44 min ago	 
3	4 hours 45 min ago	 

showing 1 to 10 of 12 entries



versions / Diff version 2 - 1 for Node RB123

Date of version: 10-10-17 at 04:12:00 PM

Number of lines changed: added 1 removed 1

Version 2 (0 min 8 sec ago)

Get Diffs!

Version 1 (5 hours 56 min ago)

```
diff --git a/RB123 b/RB123
```

```
index a494959..0fe0688 100644
```

```
--- a/RB123
```

```
@@ -20,7 +20,7 @@ set [ find default-name=wlan1 ] band=2ghz-b/g/n disabled=no distance=indoors mo
```

```
/interface ethernet
```

```
set [ find default-name=ether1 ] name=ether1-gateway
```

```
set [ find default-name=ether2 ] name=ether2-master-local
```

```
-set [ find default-name=ether3 ] name=ether3-slave-local
```

```
set [ find default-name=ether4 ] master-port=ether2-master-local name=ether4-slave-local
```

```
set [ find default-name=ether5 ] name=ether5-slave-local
```

```
/interface wireless security-profiles
```

Version 2 (0 min 8 sec ago)

```
diff --git a/RB123 b/RB123
```

```
index a494959..0fe0688 100644
```

```
+++ b/RB123
```

```
@@ -20,7 +20,7 @@ set [ find default-name=wlan1 ] band=2ghz-b/g/n disabled=no distance=indoors mo
```

```
/interface ethernet
```

```
set [ find default-name=ether1 ] name=ether1-gateway
```

```
set [ find default-name=ether2 ] name=ether2-master-local
```

```
+set [ find default-name=ether3 ] comment="new comment" name=ether3-slave-local
```

```
set [ find default-name=ether4 ] master-port=ether2-master-local name=ether4-slave-local
```

```
set [ find default-name=ether5 ] name=ether5-slave-local
```

```
/interface wireless security-profiles
```

Немного магии



Немного магии

```
apt install ruby ruby-dev libsqlite3-dev libssl-dev pkg-config cmake libssh2-1-dev
gem install oxidized
useradd oxidized
Mkdir /home/oxidized
Chown oxidized:oxidized /home/oxidized
Su - oxidized
Oxidized
```

Первый запуск создает необходимые файлы и директории



Немного магии

Правим /home/oxidized/.config/oxidized/config

```
output:  
  default: git  
  git:  
    user: oxidized  
    email: o@xidiz.ed  
    repo: "/home/oxidized/.config/oxidized/devices.git"  
source:  
  default: csv  
  csv:  
    file: "/home/oxidized/.config/oxidized/router.db"  
    delimiter: !ruby/regexp /:/  
    map:  
      name: 0  
      model: 1  
      ip: 2
```

Полный конфиг тут: <http://www.bubnovd.net/2017/10/oxidized.html>



А как быть с авторизацией?

Reverse proxy!

/etc/nginx/sites-available/default

```
auth_basic "Username and Password Required";  
auth_basic_user_file /etc/nginx/.htpasswd;
```

```
location / {  
    proxy_set_header Host $host;  
    proxy_set_header X-Real-IP $remote_addr;  
    proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;  
    proxy_pass http://192.168.33.10:80;  
}
```

```
sudo htpasswd /etc/nginx/.htpasswd username
```



ССЫЛКИ

<https://github.com/ytti/oxidized>

<https://neckercube.com/index.php/2017/05/04/how-to-install-oxidized-for-network-configuration-backup/>

<http://packetpushers.net/install-oxidized-network-configuration-backup/>

<http://www.whoopis.com/core/oxidized-quickstart-tutoria.html>

<https://log.cyconet.org/2016/01/29/oxidized-silly-attempt-at-really-awesome-new-cisco-config-differ/>





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