

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

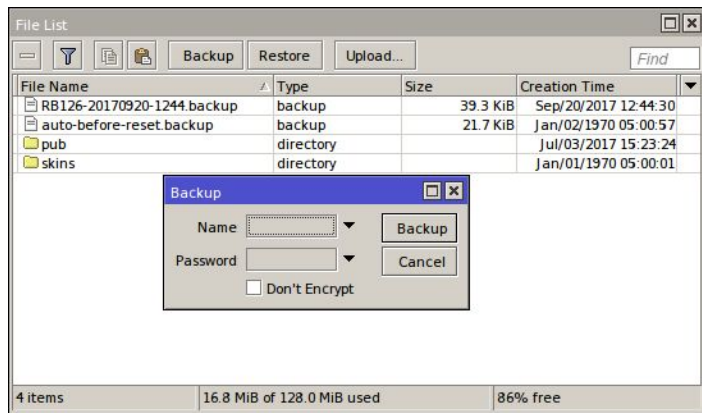


# Бэкап. Как много в этом слове...

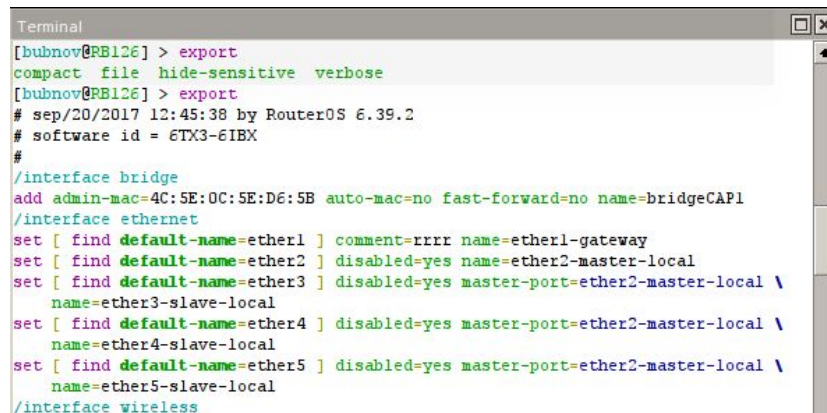


# В RouterOS два типа бэкапа

## Бинарный

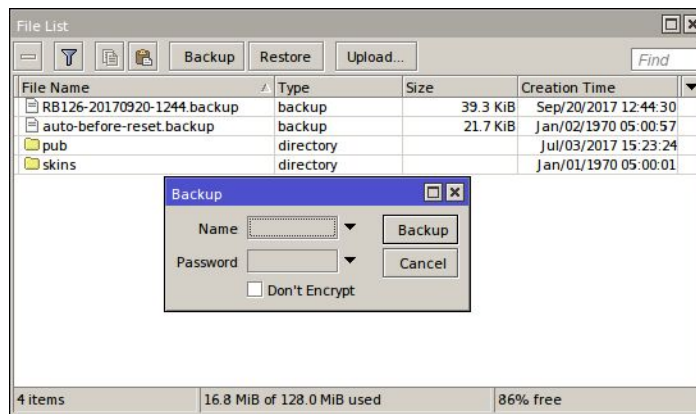


## Текстовый



# Бинарный

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



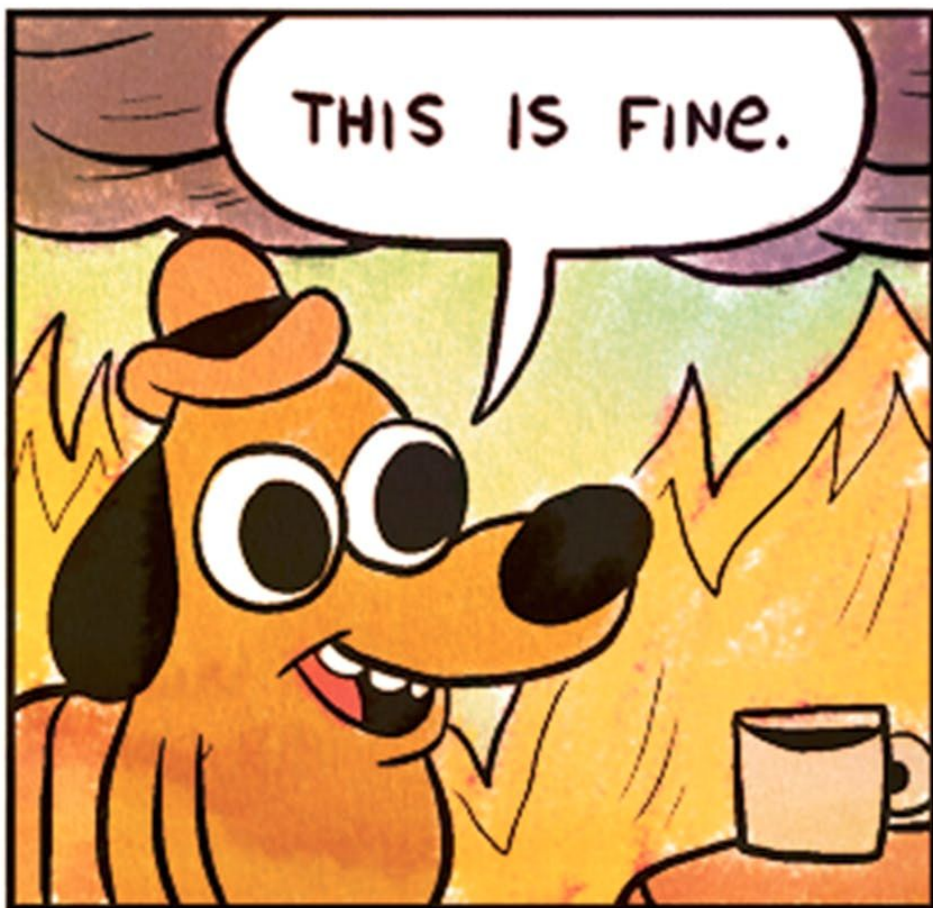
# Текстовый

- 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
#
/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
```

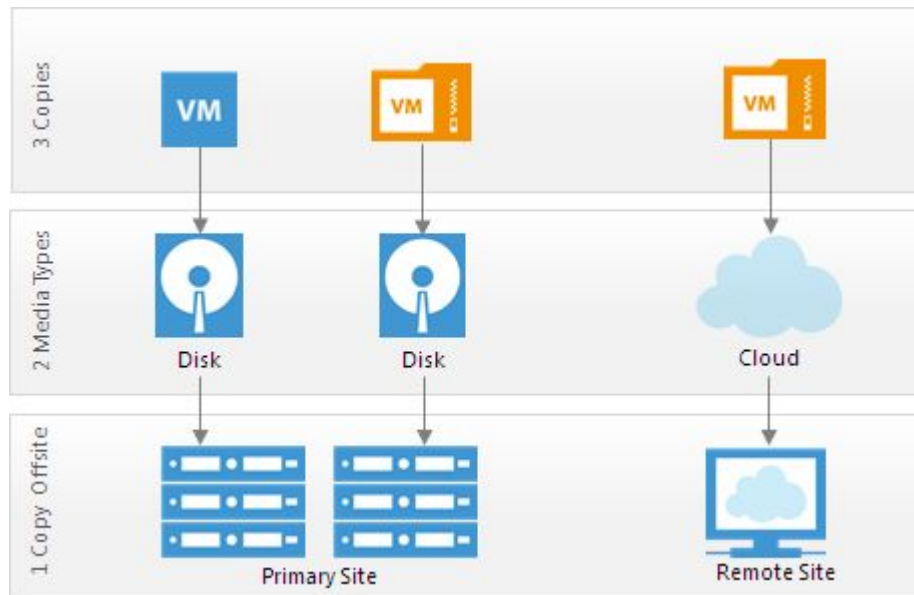






THIS IS FINE.


# Правило 3-2-1




# Отправьте бэкап себе на почту

	<b>mikrotik@u-dengi.biz</b>	<b>RB222 Setup Script Backup (sep/20/2017)</b>	RB222 Setup Script file see in attachment. RouterOS version: 6.36.4 Time and Date stamp: 02:22:14 sep/20/2017		00:22
	<b>mikrotik@u-dengi.biz</b>	<b>RB222 Full Backup (sep/20/2017)</b>	RB222 full Backup file see in attachment. RouterOS version: 6.36.4 Time and Date stamp: 02:22:06 sep/20/2017		00:22
	<b>mikrotik@u-dengi.biz</b>	<b>RB131 Setup Script Backup (sep/20/2017)</b>	RB131 Setup Script file see in attachment. RouterOS version: 6.37.1 Time and Date stamp: 01:31:14 sep/20/2017		19 сен
	<b>mikrotik@u-dengi.biz</b>	<b>RB131 Full Backup (sep/20/2017)</b>	RB131 full Backup file see in attachment. RouterOS version: 6.37.1 Time and Date stamp: 01:31:07 sep/20/2017		19 сен
	<b>mikrotik@u-dengi.biz</b>	<b>RB122 Setup Script Backup (sep/20/2017)</b>	RB122 Setup Script file see in attachment. RouterOS version: 6.38.7 Time and Date stamp: 01:22:18 sep/20/2017		19 сен
	<b>mikrotik@u-dengi.biz</b>	<b>RB122 Full Backup (sep/20/2017)</b>	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://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](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	<span style="color: green;">■</span>	2017-10-10 10:35:18 UTC	
RB126	RouterOS	default	<span style="color: green;">■</span>	2017-10-10 10:35:19 UTC	
RB127	RouterOS	default	<span style="color: green;">■</span>	2017-10-10 10:35:22 UTC	
RB128	RouterOS	default	<span style="color: green;">■</span>	2017-10-10 10:35:24 UTC	
sw11	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:37:27 UTC	
sw12	Dlink	default	<span style="color: red;">■</span>	2017-10-10 10:37:45 UTC	
sw13	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:39:45 UTC	
sw31	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:41:44 UTC	
sw32	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:43:21 UTC	
sw34	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:44:59 UTC	
sw43	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:45:07 UTC	
sw44	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:47:20 UTC	
sw45	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:49:20 UTC	
sw51	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:51:22 UTC	
sw52	Dlink	default	<span style="color: green;">■</span>	2017-10-10 10:53:30 UTC	
sw53	Dlink	default	<span style="color: green;">■</span>	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	<span style="color: green;">■</span>		2017-10-10 10:35:18 UTC	never
RB126	0	0.00%	1.72s	<span style="color: green;">■</span>		2017-10-10 10:35:19 UTC	never
RB127	0	0.00%	1.79s	<span style="color: green;">■</span>		2017-10-10 10:35:22 UTC	never
RB128	0	0.00%	2.37s	<span style="color: green;">■</span>		2017-10-10 10:35:24 UTC	never
sw11	0	0.00%	122.72s	<span style="color: green;">■</span>		2017-10-10 10:37:27 UTC	never
sw12	4	100.00%	4.15s	<span style="color: red;">■</span>		never	2017-10-10 10:37:45 UTC
sw13	0	0.00%	119.39s	<span style="color: green;">■</span>		2017-10-10 10:39:45 UTC	never
sw31	0	0.00%	117.82s	<span style="color: green;">■</span>		2017-10-10 10:41:44 UTC	never
sw32	0	0.00%	97.26s	<span style="color: green;">■</span>		2017-10-10 10:43:21 UTC	never
sw34	0	0.00%	96.71s	<span style="color: green;">■</span>		2017-10-10 10:44:59 UTC	never
sw43	0	0.00%	8.09s	<span style="color: green;">■</span>		2017-10-10 10:45:07 UTC	never
sw44	0	0.00%	132.48s	<span style="color: green;">■</span>		2017-10-10 10:47:20 UTC	never
sw45	0	0.00%	118.94s	<span style="color: green;">■</span>		2017-10-10 10:49:20 UTC	never
sw51	0	0.00%	122.12s	<span style="color: green;">■</span>		2017-10-10 10:51:22 UTC	never
sw52	0	0.00%	126.79s	<span style="color: green;">■</span>		2017-10-10 10:53:30 UTC	never
sw53	0	0.00%	125.47s	<span style="color: green;">■</span>		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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