HTTPS

WNAM . "". , .

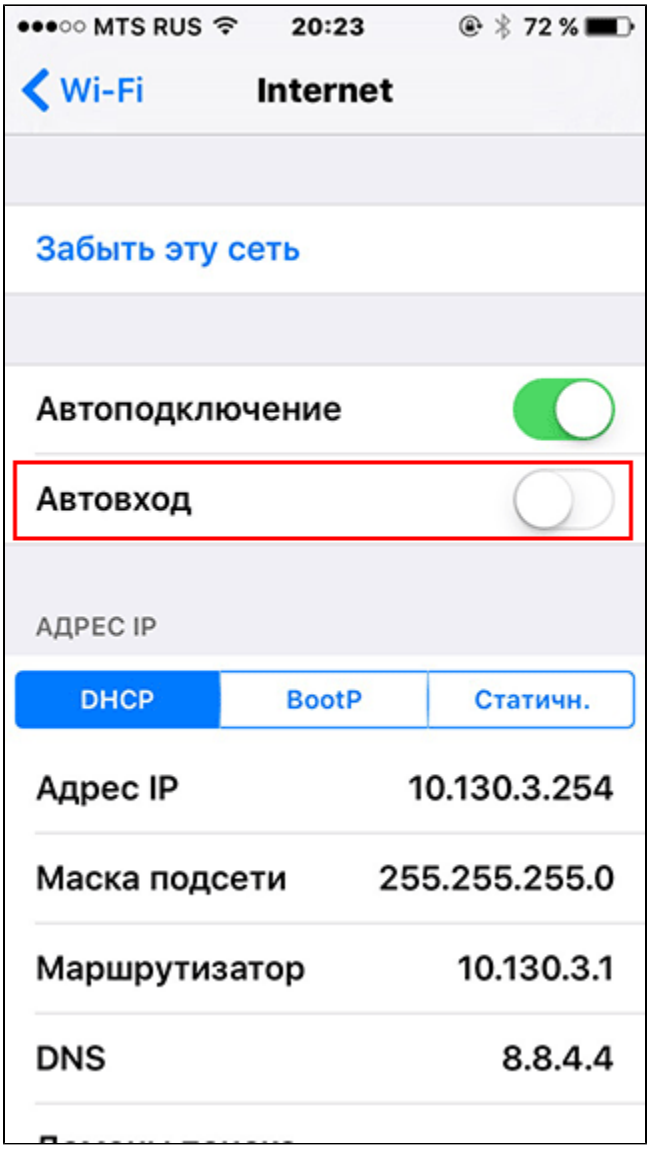
, , IP- , . c Android iOS:

- Android http://www.gstatic.com/generate_204.
- iOS ( ) www.ibook.info, www.appleiphonecell.com, captive.apple.com ..

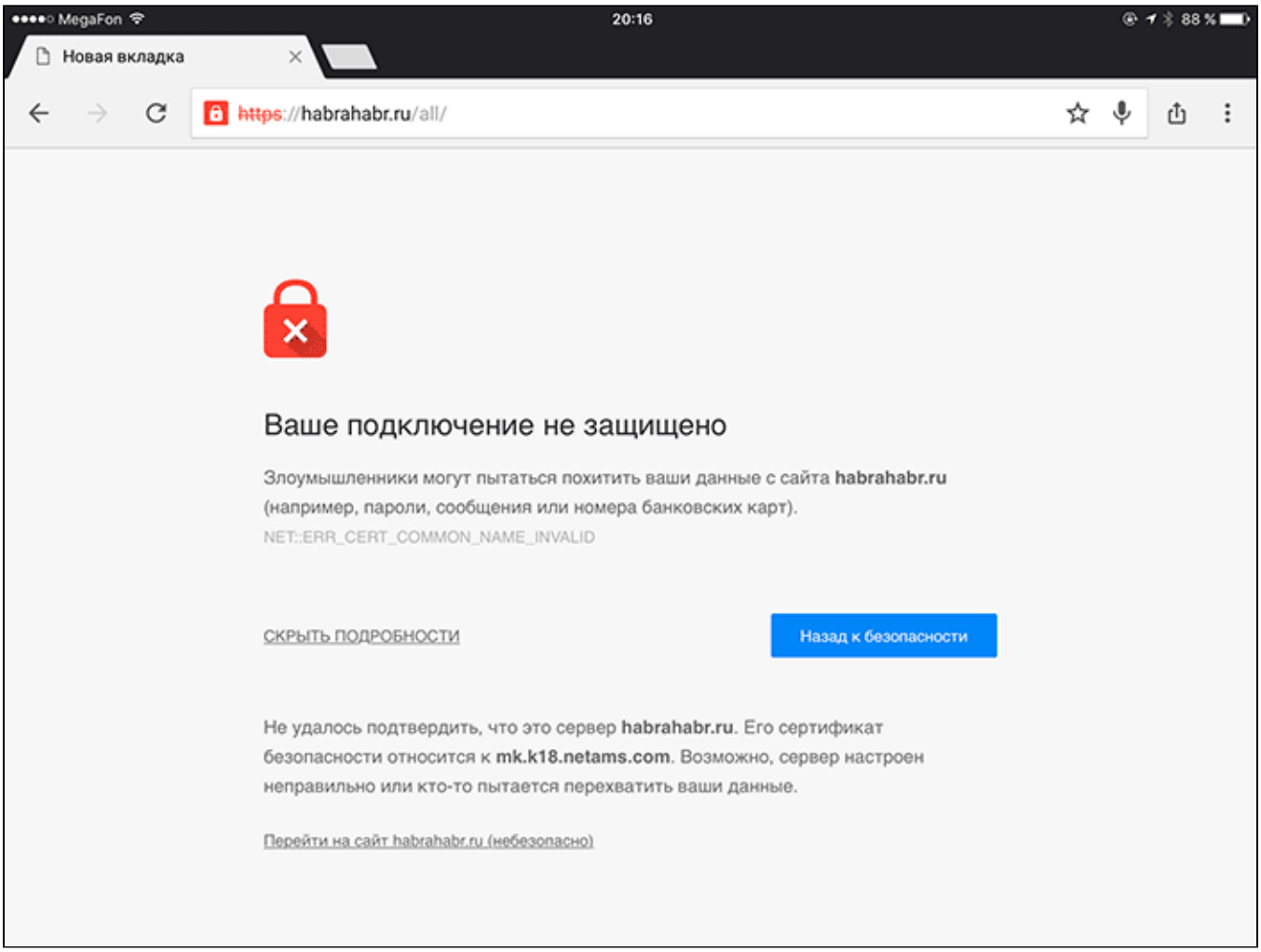
, . , (-), . Captive Network Assistant (CNA).

, - , CNA . (Cisco, Aruba) CNA Bypass, "" , , . - .

CNA iOS "", .



CNA, Wi-Fi , . , , , , (Google, Yandex). HTTPS, () . HTTP . , (, Linux-, Mikrotik ..) HTTPS-. , , SSL- , WNAM. HTTPS- . , .



, MITM (Man-In-The-Middle), . :

- https-. HTTPS (.. SSL) IP- , DNS-, 443.
- (Mikrotik) (-), .
- TCP- SSL-, . , , .
- "", .. , (, auth.provider.ru), (, google.com).
- , Wi-Fi, , .

> - WNAM. SSL HTTPS-.

(,) HTTPS-. :

- WNAM HTTP- ;
- HTTPS-;
- HTTPS- - tomcat, WNAM ;
- HTTPS- , .

> , HTTPS- WNAM, . , HTTPS, , HTTPS- CNA.

HTTPS- SSL. :

- , , "" , ;
- , Synamtec, Thawte, Verisign, Comodo .. 1 ;
- Let's Encrypt WoSign (90).

, . Letsencrypt , . , , . IP-, DNS- , Split DNS DNS- Wi-Fi .

, Mikrotik **172.16.130.9** **mk.k18.netams.com**, WNAM **172.16.130.13** **debian64.k18.netams.com**. 2- Wildcard- (*.mydomain.ru).

, Letsencrypt, :

```
# openssl x509 -in cert.pem -text -noout

Certificate:
 Data:
 Version: 3 (0x2)
 Serial Number:
 03:0c:ab:c8:e6:3a:0c:7e:5a:e5:ff:23:ab:5f:cf:9b:15:a5
 Signature Algorithm: sha256WithRSAEncryption
 Issuer: C=US, O=Let's Encrypt, CN=Let's Encrypt Authority X3
 Validity
 Not Before: May 15 14:45:00 2016 GMT
 Not After : Aug 13 14:45:00 2016 GMT
 Subject: CN=mk.k18.netams.com
 Subject Public Key Info:
 Public Key Algorithm: rsaEncryption
 Public-Key: (2048 bit)
 Modulus:
 ...
 Exponent: 65537 (0x10001)
 X509v3 extensions:
 X509v3 Key Usage: critical
 Digital Signature, Key Encipherment
 X509v3 Extended Key Usage:
 TLS Web Server Authentication, TLS Web Client Authentication
 X509v3 Basic Constraints: critical
 CA:FALSE
 X509v3 Subject Key Identifier:
 C4:B9:60:6C:08:8E:00:AB:9D:F9:40:59:09:1A:16:B3:62:3C:71:36
 X509v3 Authority Key Identifier:
 keyid:A8:4A:6A:63:04:7D:DD:BA:E6:D1:39:B7:A6:45:65:EF:F3:A8:EC:A1

Authority Information Access:
 OCSP - URI:http://ocsp.int-x3.letsencrypt.org/
 CA Issuers - URI:http://cert.int-x3.letsencrypt.org/

X509v3 Subject Alternative Name:
 DNS:mk.k18.netams.com
 X509v3 Certificate Policies:
 Policy: 2.23.140.1.2.1
 Policy: 1.3.6.1.4.1.44947.1.1.1
 CPS: http://cps.letsencrypt.org
 User Notice:
 Explicit Text: This Certificate may only be relied upon by Relying Parties and
only in accordance with the Certificate Policy found at https://letsencrypt.org
/repository/

Signature Algorithm: sha256WithRSAEncryption
 ...
```

nginx, tomcat 8080 nginx -. ().

tomcat

JKS, -. **fullchain1.pem** **privkey1.pem** PKCS#12 **debian64.p12**. : Password.

```
    openssl pkcs12 -export -in fullchain1.pem -inkey privkey1.pem -out debian64.
p12 -name tomcat
```

JKS c :

```
keytool -importkeystore -deststorepass Password -destkeypass Password -
destkeystore debian64.jks -srckeystore debian64.p12 -srcstoretype PKCS12 -
srcstorepass Password -alias tomcat
```

tomcat:

```
cp debian64.jks /etc/tomcat7/
```

- **/etc/tomcat7/server.xml** , :

```
<Connector port="443" protocol="org.apache.coyote.http11.
Http11Protocol" URIEncoding="UTF-8" keystoreFile="/etc/tomcat7/debian64.
jks" keystorePass="Password" keyAlias="tomcat" keyPass="Password"
 maxThreads="150" SSLEnabled="true" scheme="https" secure="true" clientAuth="
false" sslProtocol="TLS" />
```

- HTTPS (443):

```
touch /etc/authbind/byport/443

chmod 500 /etc/authbind/byport/443

chown tomcat7 /etc/authbind/byport/443
```

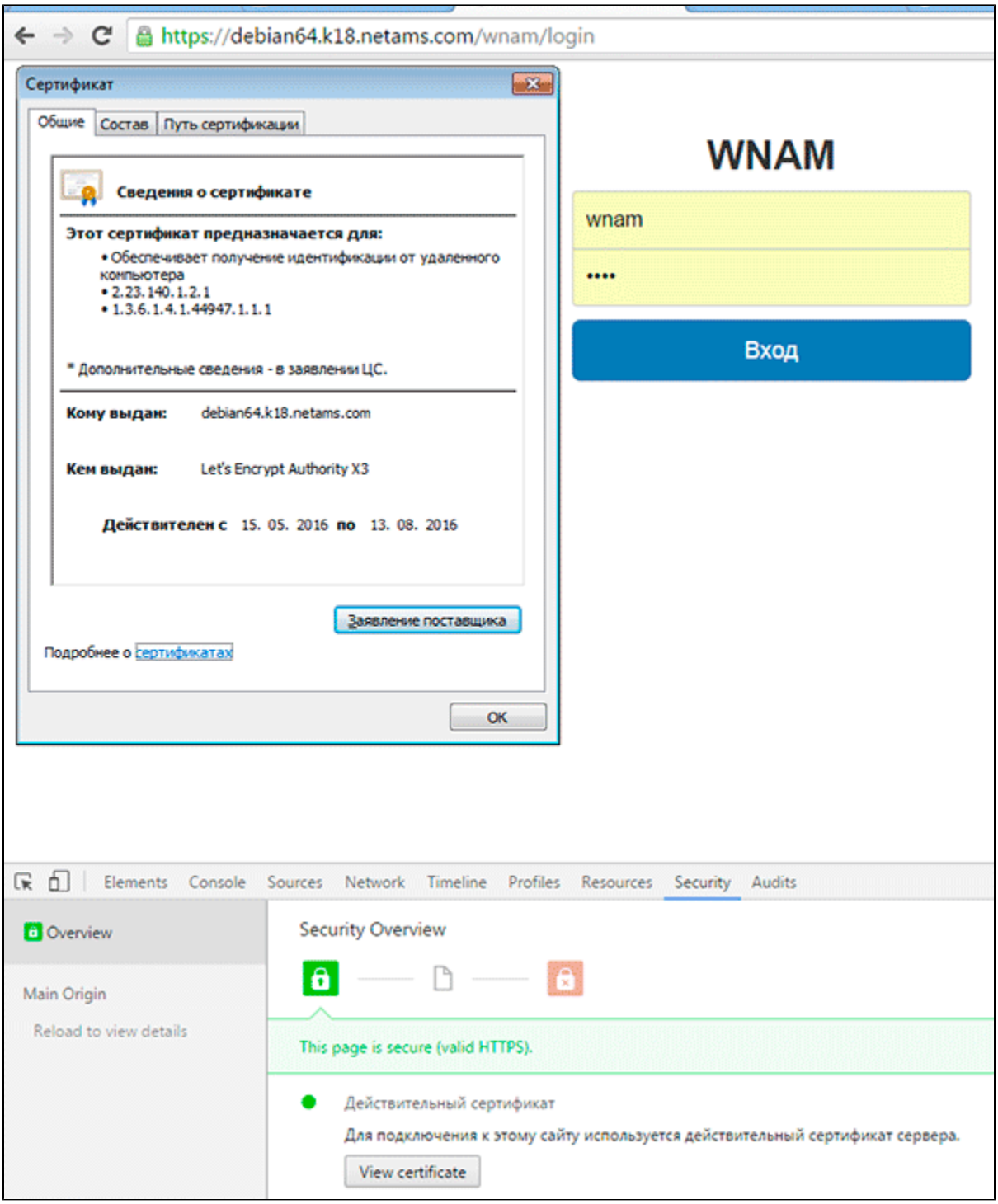
-:

```
/etc/init.d/tomcat7 restart
```

- **/var/log/tomcat7/catalina.out** :

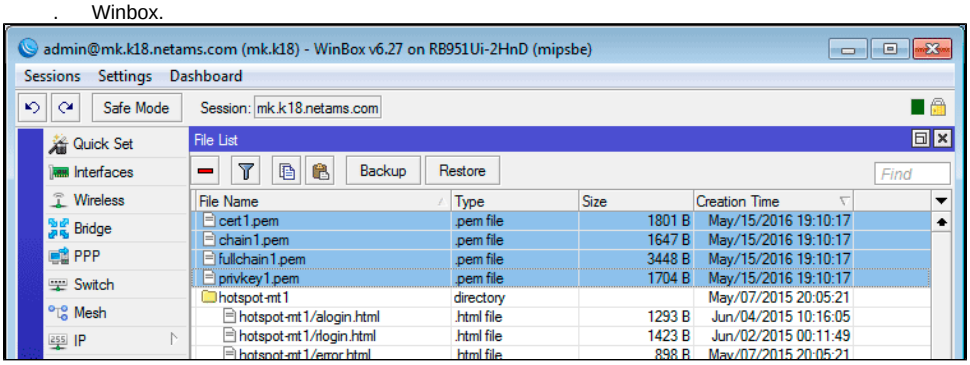
```
INFO: Deployment of web application archive /var/lib/tomcat7/webapps/ROOT.
war has finished in 52,197 ms
 15, 2016 6:58:21 PM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["http-bio-80"]
 15, 2016 6:58:21 PM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["http-bio-443"]
 15, 2016 6:58:21 PM org.apache.catalina.startup.Catalina start
INFO: Server startup in 54766 ms
```

WNAM https:///wnam/home, SSL-, .

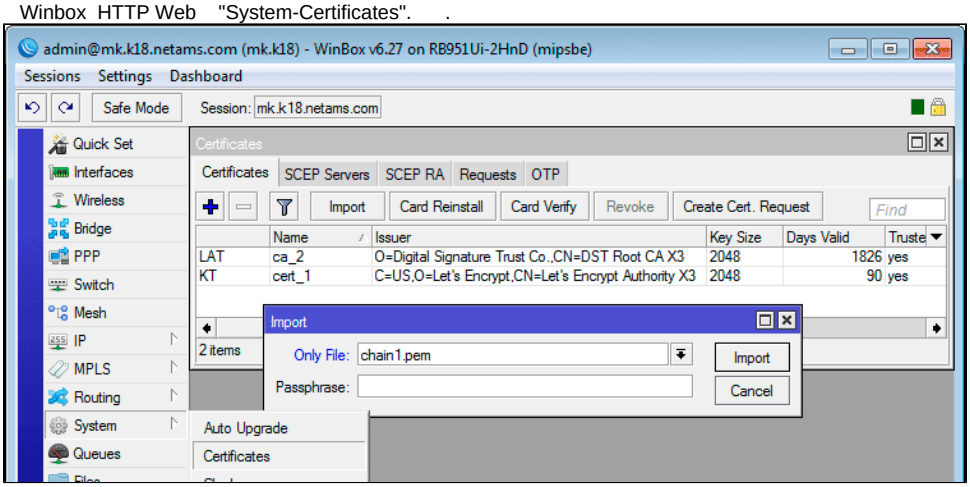

https://debian64.k18.netams.com/wnam/login
Сертификат
Общие
Состав
Путь сертификации
Сведения о сертификате
Этот сертификат предназначается для:
• Обеспечивает получение идентификации от удаленного компьютера
• 2.23.140.1.2.1
• 1.3.6.1.4.1.44947.1.1.1
* Дополнительные сведения - в заявлении ЦС.
Кому выдан: debian64.k18.netams.com
Кем выдан: Let's Encrypt Authority X3
Действителен с 15. 05. 2016 по 13. 08. 2016
Заявление поставщика
Подробнее о сертификатах
OK
WNAM
wnam
Вход
Elements
Console
Sources
Network
Timeline
Profiles
Resources
Security
Audits
Overview
Main Origin
Reload to view details
Security Overview
This page is secure (valid HTTPS).
Действительный сертификат
Для подключения к этому сайту используется действительный сертификат сервера.
View certificate

Mikrotik. .

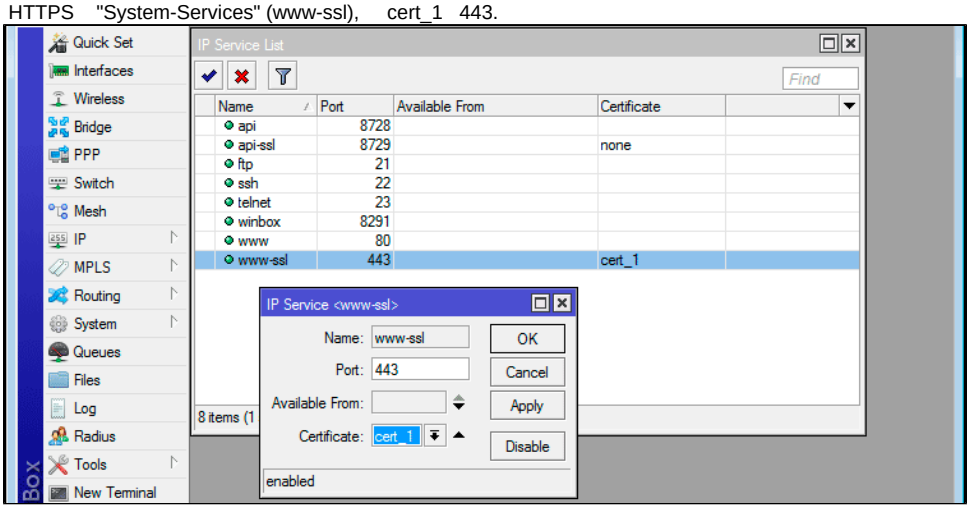
1. . Winbox.



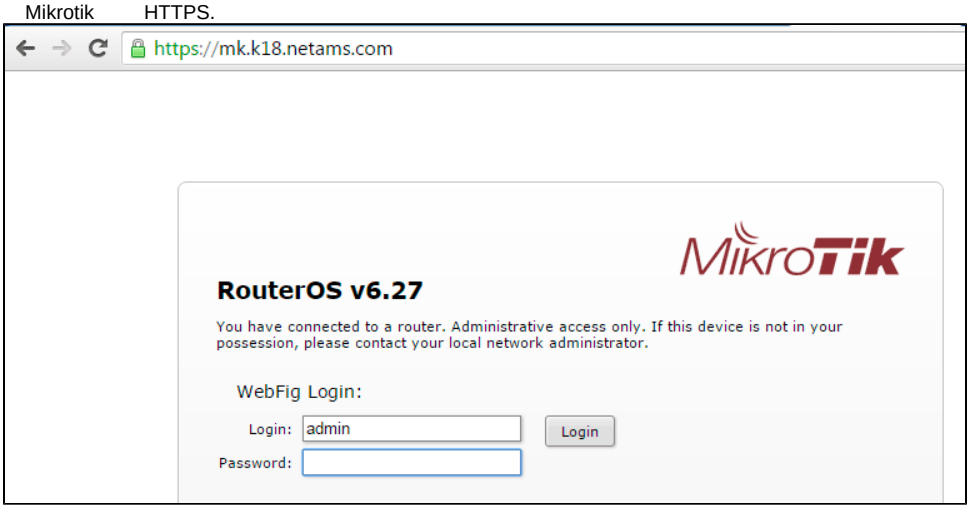
2. Winbox HTTP Web "System-Certificates". .



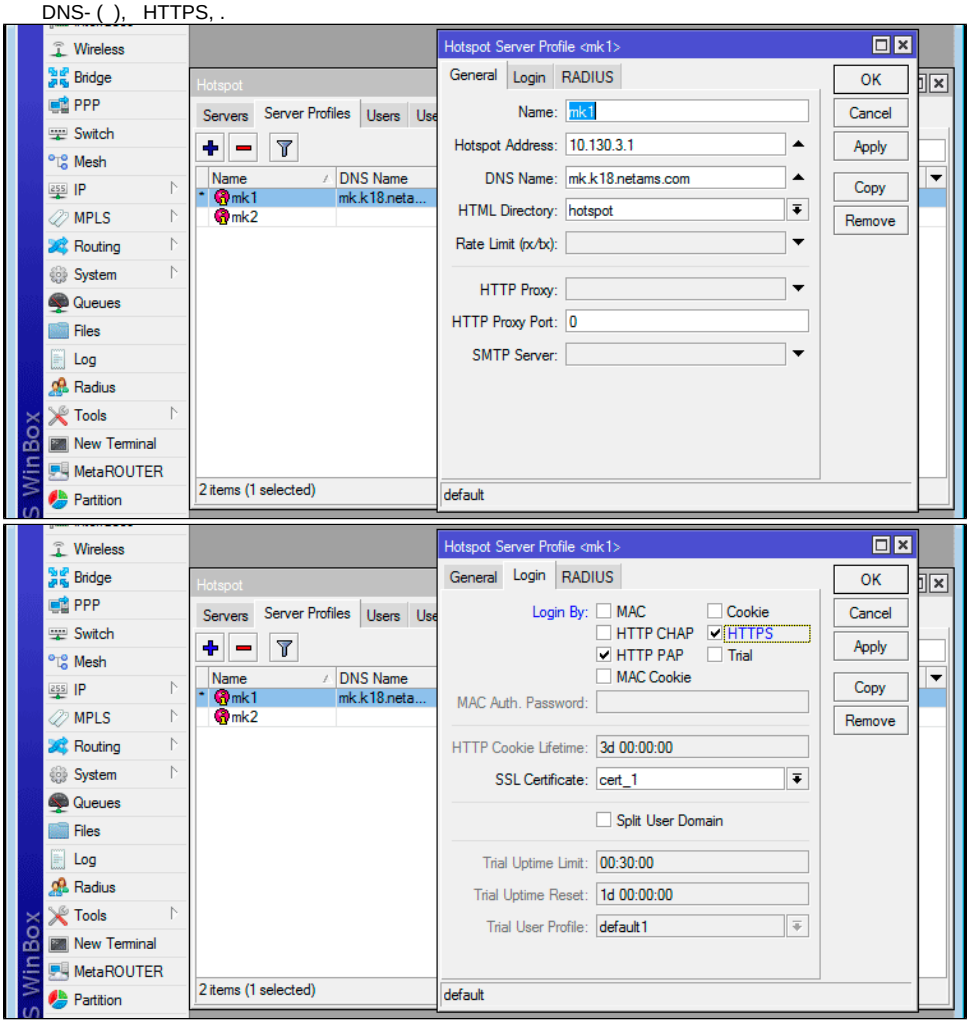
3. HTTPS "System-Services" (www-ssl), cert_1 443.



4. Mikrotik HTTPS.



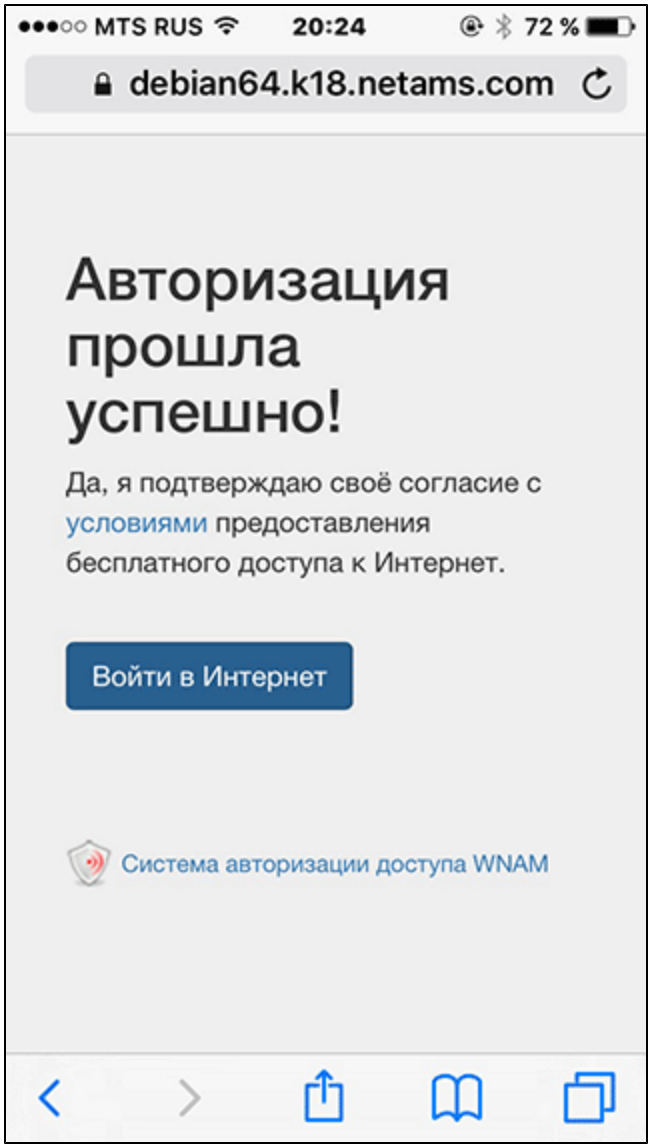
5. DNS- ( ), HTTPS, .



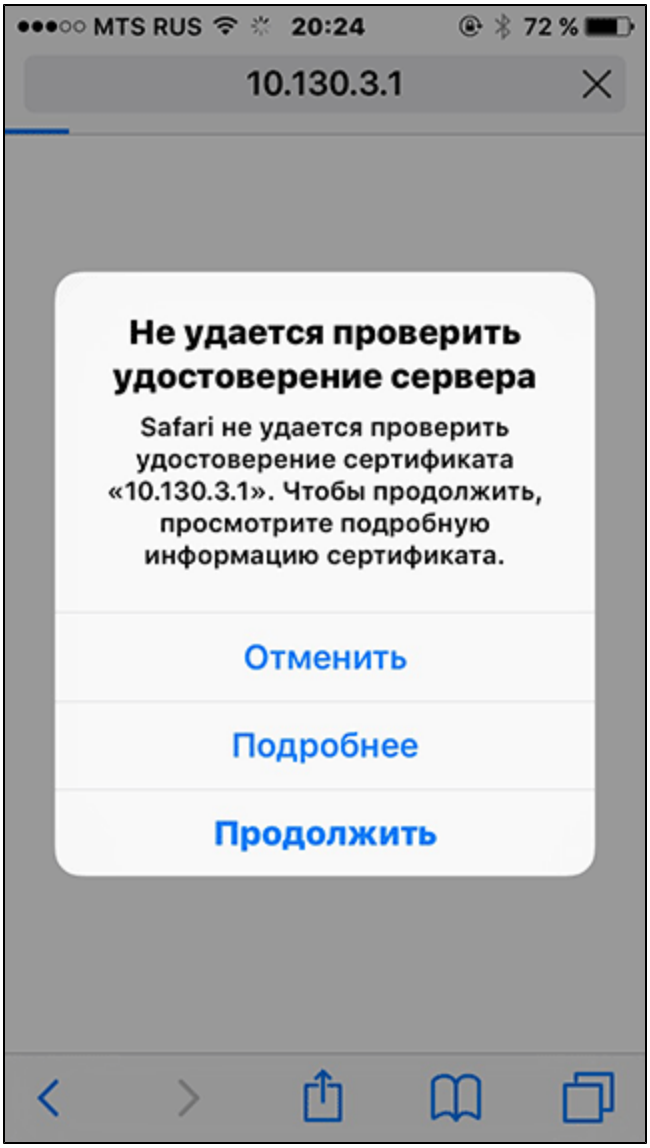
6. **hotspot/rlogin.html**, Mikrotik, HTTPS- DNS-, :

```
<form name="wnamlogin" action="https://debian64.k18.netams.com/cp/mikrotik" method="post">
<input type="hidden" name="server-address" value = "mk.k18.netams.com:443" />
```

HTTPS- HTTPS- Mikrotik. SSL-.


MTS RUS
20:24
72 %
debian64.k18.netams.com
Авторизация прошла успешно!
Да, я подтверждаю своё согласие с условиями предоставления бесплатного доступа к Интернет.
Войти в Интернет
Система авторизации доступа WNAM

rlogin.html, .



, WNAM. Let's Encrypt 90 , 1 .