

Настройка аппаратного клиента Cisco VPN 3002 для работы с маршрутизатором Cisco IOS, с EzVPN в режиме расширения сети

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Введение

Этот документ описывает конфигурацию аппаратного клиента Cisco VPN 3002, который подключает с маршрутизатором Cisco IOS® в Режиме расширения сети с программным обеспечением Cisco IOS версии 12.2(8)T и Легкой VPN (EzVPN) функциональную возможность сервера. Это позволяет Cisco IOS завершать VPN-туннели, которые прибывают от Клиентов EzVPN, таких как Клиенты VPN, PIX и Клиенты EzVPN Cisco IOS. Существует свинцовый сурик пяти сопоставлений безопасности (SA) (один Обмен ключами между сетями [IKE] плюс четыре IPsec), когда Клиент VPN соединяется с устройством головной станции. Это - то, вследствие того, что, когда Клиент VPN соединяется с головным узлом, он всегда выполняет согласование о двух КОНТЕКСТАХ БЕЗОПАСНОСТИ IPSEC с IP-адресом открытого интерфейса концентратора к IP-адресу головного узла. Этот туннель используется для целей управления для соединения с Клиентом VPN от головного узла или через GUI или через Интерфейс командной строки (CLI). Это делается автоматически. Другие два для трафика данных между сетями позади Клиента VPN и маршрутизатора Cisco IOS.

См. [Настройку аппаратный клиент VPN 3002 к PIX 6.x](#) для узнавания больше о том же сценарии, где сервер VPN является PIX 6. x.

См. [Настройку Соединение Между аппаратным клиентом VPN 3002 и VPN 3000 Concentrator в Режиме расширения сети](#) для узнавания больше о том же сценарии, где сервер VPN

является концентратором Cisco VPN серии 3000.

Предварительные условия

Требования

Для этого документа отсутствуют особые требования.

Используемые компоненты

Сведения, содержащиеся в данном документе, касаются следующих версий программного обеспечения и оборудования:

- Аппаратный клиент Cisco VPN 3002
- Cisco IOS Software Release 12.2 (8) T и позднее

Сведения, представленные в этом документе, были получены от устройств, работающих в специальной лабораторной среде. Все устройства, описанные в этом документе, были запущены с чистой (стандартной) конфигурацией. В рабочей сети необходимо изучить потенциальное воздействие всех команд до их использования.

Условные обозначения

[Дополнительные сведения об условных обозначениях см. в документе Условные обозначения технических терминов Cisco.](#)

Конфигурации

В этом разделе содержатся сведения о настройке функций, описанных в этом документе.

Примечание: [Чтобы получить подробные сведения о командах в данном документе, используйте Средство поиска команд \(только для зарегистрированных клиентов\).](#)

Схема сети

В настоящем документе используется следующая схема сети:

Эти конфигурации используются в данном документе.

- [Маршрутизатор с ПО Cisco IOS](#)
- [Аппаратный клиент Cisco VPN 3002](#)

Маршрутизатор с ПО Cisco IOS

```
akim#show running Current configuration : 1449 bytes !
version 12.2 service config service timestamps debug
uptime service timestamps log uptime no service
password-encryption ! hostname akim ! !--- Enable
Authentication, Authorizing and Accounting (AAA) !---
for user authentication and group authorization. aaa
new-model !--- To enable X-Auth for user authentication,
```

```

!--- enable the AAA commands. aaa authentication login
userauthen local !--- To enable group authorization, !---
- enable the AAA commands. aaa authorization network
groupauthen local aaa session-id common ! !--- Define
the username and password to be used for X-Auth.
username fadi password 0 cisco memory-size iomem 10 ip
subnet-zero ! ! ! !--- Create an Internet Security
Association and !--- Key Management Protocol (ISAKMP)
policy for Phase 1 negotiations. crypto isakmp policy 3
encr 3des authentication pre-share group 2 ! !--- Create
a group with the pre-shared key for IKE authentication.
crypto isakmp client configuration group fadigroup key
cisco123 ! ! !--- Create the Phase 2 policy for actual
data encryption. crypto ipsec transform-set myset esp-
3des esp-sha-hmac ! !--- Create a dynamic map and !---
apply the transform set that was created earlier. crypto
dynamic-map dynmap 10 set transform-set myset ! !---
Create the actual crypto map, !--- and apply the AAA
lists that were created earlier. !--- These commands
associate the AAA commands to the crypto map. crypto map
clientmap client authentication list userauthen crypto
map clientmap isakmp authorization list groupauthen
crypto map clientmap 10 ipsec-isakmp dynamic dynmap ! !
! ! ! ! ! ! fax interface-type fax-mail mta receive
maximum-recipients 0 ! ! ! ! ! !--- Apply the crypto map
on the interface where !--- traffic leaves the router.
interface FastEthernet0/0 ip address 209.165.202.129
255.255.255.224 duplex auto speed auto crypto map
clientmap ! interface Serial0/0 no ip address shutdown
no fair-queue clockrate 2000000 ! interface
FastEthernet0/1 ip address 10.48.220.1 255.255.254.0
duplex auto speed auto ! interface Serial0/1 no ip
address shutdown clockrate 2000000 ! ip classless ip
route 0.0.0.0 0.0.0.0 209.165.202.130 ip http server ip
pim bidir-enable ! ! ! ! call rsvp-sync ! ! mgcp profile
default ! dial-peer cor custom ! ! ! ! ! line con 0
exec-timeout 0 0 line aux 0 line vty 0 4 ! ! end

```

[Настройте аппаратный клиент Cisco VPN 3002](#)

Выполните эти шаги, чтобы настроить VPN-клиент:

1. Выберите **Configuration> Interfaces** и проверьте IP-адрес.
2. Выберите **Configuration> Quick> Time and Date> Time**, чтобы установить и проверить время.
3. Выберите **Configuration> Quick> Private Interface> Private Intf** для настройки статических IP - адресов на внутренних хостах (никакой DHCP).
4. Выберите **No** для "Вас, хотят настроить IP-адрес Частного интерфейса?".
5. Выберите **No, не используйте сервер DHCP для обеспечения адресов для "Вас, хотят использовать сервер DHCP на Интерфейсе 1 для обеспечения адресов для локальной сети?"**.
6. Задайте IP-адрес, если вы имеете статичный путем выбора **Configuration> Quick> Public Interface> Public Intf**.
7. Из окна Public Interface выберите **Specify an IP address** и введите соответствующий IP-адрес, Маску подсети и Шлюз по умолчанию.
8. Настройте удаленный узел VPN (открытый IP - адрес маршрутизатора). Чтобы сделать это, выберите **Configuration> Quick> IPSec** и введите **fadigroup** для Имени группы,

cisco123 для Пароля группы, **fadi** для Имени пользователя и **Cisco** для Пароля пользователя.

9. Выберите **Configuration> Quick> PAT** и выберите **No**, используйте **Режим расширения сети** из окна PAT для настройки сетевого Расширенного режима.
10. Выберите **Configuration> Quick> DNS** и введите Сервер DNS интернет-провайдера и Доменное имя для настройки DNS.
11. Выберите **Configuration> Quick> Static Routes** и нажмите **Add** для добавления статического маршрута к таблице маршрутизации для настройки шлюза по умолчанию Клиента VPN.

Проверка

В этом разделе содержатся сведения, которые помогают убедиться в надлежащей работе конфигурации.

[Средство Output Interpreter \(OIT\) \(только для зарегистрированных клиентов\) поддерживает определенные команды show.](#) Посредством OIT можно анализировать выходные данные команд **show**.

См. [Устранение проблем системы безопасности IP - Понимание и Использование команд отладки](#) для подходящих команд показа.

Устранение неполадок

В этом разделе описывается процесс устранения неполадок конфигурации.

Примечание: Если PAT Включил, используется в клиенте Cisco VPN 3002, повторная загрузка удаляет имя пользователя и пароль, которое существует. Необходимо настроить новое имя пользователя и пароль для клиента.

Примечание: Если PAT, Отключенный (NEM), используется, повторная загрузка сохраняет имя пользователя и пароль при условии, что головной узел настроен для сохранения имени пользователя и пароля.

Процедура устранения неполадок

Здесь представлены сведения по устранению проблем в данной конфигурации. Для дополнительных сведений об устранении проблем обратитесь к [Устранению проблем системы безопасности IP - Понимание и Использование команд отладки](#). Выполните эти шаги для устранения проблем конфигурации:

1. Гарантируйте наблюдение установления SA Фазы 1 и Фазы 2. Используйте срок отладки в разделе [Команд устранения проблем](#).
2. Как только вы видите SA, передайте трафик между защищенными сетями для тестирования подключения.

Команды для устранения неполадок

[Средство Output Interpreter \(OIT\) \(только для зарегистрированных клиентов\) поддерживает определенные команды show.](#) Посредством OIT можно анализировать выходные данные команд show.

Примечание: [Прежде чем выполнять какие-либо команды отладки, ознакомьтесь с документом "Важные сведения о командах отладки".](#)

- **debug crypto ipsec**– показывает события IPSec.
- **debug crypto isakmp** – отображает сообщения о событиях IKE.
- **debug crypto engine** сообщения отладки о ядрах шифрования, которые выполняют шифрование и расшифровку.

```
!--- Cisco IOS has received a request for new SA from the VPN Client. 03:36:19: ISAKMP (0:0):
received packet from 209.165.200.225 (N) NEW SA 03:36:19: ISAKMP: local port 500, remote port
500 03:36:19: ISAKMP (0:1): (Re)Setting client xauth list userauthen and state 03:36:19: ISAKMP:
Locking CONFIG struct 0x631B752C from crypto_ikmp_config_initialize_sa, count 1 03:36:19: ISAKMP
(0:1): processing SA payload. message ID = 0 03:36:19: ISAKMP (0:1): processing ID payload.
message ID = 0 03:36:19: ISAKMP (0:1): processing vendor id payload 03:36:19: ISAKMP (0:1):
vendor ID seems Unity/DPD but bad major 03:36:19: ISAKMP (0:1): vendor ID is XAUTH 03:36:19:
ISAKMP (0:1): processing vendor id payload 03:36:19: ISAKMP (0:1): vendor ID is Unity !--- Cisco
IOS checks the incoming ISAKMP proposal with the policy !--- defined in Cisco IOS. 03:36:19:
ISAKMP (0:1): Checking ISAKMP transform 1 against priority 3 policy 03:36:19: ISAKMP: default
group 2 03:36:19: ISAKMP: encryption 3DES-CBC 03:36:19: ISAKMP: hash SHA 03:36:19: ISAKMP: auth
XAUTHInitPreShared 03:36:19: ISAKMP: life type in seconds 03:36:19: ISAKMP: life duration (VPI)
of 0x7F 0xFF 0xFF 0xFF 03:36:19: ISAKMP (0:1): atts are acceptable. Next payload is 3 03:36:19:
CryptoEngine0: generate alg parameter 03:36:19: CRYPTO_ENGINE: Dh phase 1 status: 0 03:36:19:
CRYPTO_ENGINE: Dh phase 1 status: 0 03:36:19: ISAKMP (0:1): processing KE payload. message ID =
0 03:36:19: CryptoEngine0: generate alg parameter 03:36:19: ISAKMP (0:1): processing NONCE
payload. message ID = 0 03:36:19: ISAKMP (0:1): processing vendor id payload 03:36:19: ISAKMP
(0:1): vendor ID seems Unity/DPD but bad major 03:36:19: ISAKMP (0:1): vendor ID is XAUTH
03:36:19: ISAKMP (0:1): processing vendor id payload 03:36:19: ISAKMP (0:1): vendor ID is Unity
03:36:19: ISAKMP (0:1): Input = IKE_MSG_FROM_PEER, IKE_AM_EXCH Old State = IKE_READY New State
= IKE_R_AM_AAA_AWAIT 03:36:19: ISAKMP: got callback 1 03:36:19: CryptoEngine0: create ISAKMP
SKEYID for conn id 1 03:36:19: ISAKMP (0:1): SKEYID state generated 03:36:19: ISAKMP (0:1): SA
is doing pre-shared key authentication plux XAUTH using id type ID_IPV4_ADDR 03:36:19: ISAKMP
(1): ID payload next-payload : 10 type : 1 protocol : 17 port : 500 length : 8 03:36:19: ISAKMP
(1): Total payload length: 12 03:36:19: CryptoEngine0: generate hmac context for conn id 1
03:36:19: ISAKMP (0:1): sending packet to 209.165.200.225 (R) AG_INIT_EXCH 03:36:19: ISAKMP
(0:1): Input = IKE_MSG_FROM_AAA, PRESHARED_KEY_REPLY Old State = IKE_R_AM_AAA_AWAIT New State =
IKE_R_AM2 03:36:27: ISAKMP (0:1): received packet from 209.165.200.225 (R) AG_INIT_EXCH
03:36:28: ISAKMP (0:1): sending packet to 209.165.200.225 (R) AG_INIT_EXCH 03:36:28: ISAKMP
(0:1): received packet from 209.165.200.225 (R) AG_INIT_EXCH 03:36:28: ISAKMP (0:1): processing
HASH payload. message ID = 0 03:36:28: CryptoEngine0: generate hmac context for conn id 1
03:36:28: ISAKMP (0:1): processing NOTIFY INITIAL_CONTACT protocol 1 spi 0, message ID = 0, sa =
63393F7C 03:36:28: ISAKMP (0:1): Process initial contact, bring down existing phase 1 and 2 SA's
03:36:28: ISAKMP (0:1): returning IP addr to the address pool 03:36:28: ISAKMP (0:1): peer does
not do paranoid keepalives. 03:36:28: ISAKMP (0:1): processing vendor id payload 03:36:28:
ISAKMP (0:1): vendor ID is DPD !--- Phase 1 is now complete and ISAKMP SA is negotiated.
03:36:28: ISAKMP (0:1): SA has been authenticated with 209.165.200.225 03:36:28: CryptoEngine0:
clear dh number for conn id 1 03:36:28: CryptoEngine0: generate hmac context for conn id 1
03:36:28: ISAKMP (0:1): sending packet to 209.165.200.225 (R) QM_IDLE 03:36:28: ISAKMP (0:1):
purging node -2033367886 03:36:28: ISAKMP: Sending phase 1 responder lifetime 86400 03:36:28:
ISAKMP (0:1): Input = IKE_MSG_FROM_PEER, IKE_AM_EXCH Old State = IKE_R_AM2 New State =
IKE_P1_COMPLETE 03:36:28: IPSEC(key_engine): got a queue event... 03:36:28:
IPSEC(key_engine_delete_sas): rec'd delete notify from ISAKMP 03:36:28:
IPSEC(key_engine_delete_sas): delete all SAs shared with 209.165.200.225 !--- Proceed to the
Extended Authentication. !--- Remember that XAUTH is done before Phase 2 and after Phase 1.
03:36:28: ISAKMP (0:1): Need XAUTH 03:36:28: ISAKMP (0:1): Input = IKE_MSG_INTERNAL,
IKE_PHASE1_COMPLETE Old State = IKE_P1_COMPLETE New State = IKE_XAUTH_AAA_START_LOGIN_AWAIT
03:36:28: ISAKMP: got callback 1 03:36:28: ISAKMP/xauth: request attribute XAUTH_TYPE_V2
```

03:36:28: ISAKMP/xauth: request attribute XAUTH_MESSAGE_V2 03:36:28: ISAKMP/xauth: request attribute XAUTH_USER_NAME_V2 03:36:28: ISAKMP/xauth: request attribute XAUTH_USER_PASSWORD_V2 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ISAKMP (0:1): initiating peer config to 209.165.200.225. ID = 1189186805 03:36:28: ISAKMP (0:1): sending packet to 209.165.200.225 (R) CONF_XAUTH 03:36:28: ISAKMP (0:1): Input = IKE_MESG_FROM_AAA, IKE_AAA_START_LOGIN Old State = IKE_XAUTH_AAA_START_LOGIN_AWAIT New State = IKE_XAUTH_REQ_SENT 03:36:28: ISAKMP (0:1): received packet from 209.165.200.225 (R) CONF_XAUTH 03:36:28: ISAKMP (0:1): processing transaction payload from 209.165.200.225. message ID = 1189186805 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ISAKMP: Config payload REPLY 03:36:28: ISAKMP/xauth: reply attribute XAUTH_USER_NAME_V2 03:36:28: ISAKMP/xauth: reply attribute XAUTH_USER_PASSWORD_V2 03:36:28: ISAKMP (0:1): deleting node 1189186805 error FALSE reason "done with xauth request/reply exchange" 03:36:28: ISAKMP (0:1): Input = IKE_MESG_FROM_PEER, IKE_CFG_REPLY Old State = IKE_XAUTH_REQ_SENT New State = IKE_XAUTH_AAA_CONT_LOGIN_AWAIT 03:36:28: ISAKMP: got callback 1 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ISAKMP (0:1): initiating peer config to 209.165.200.225. ID = 1490194005 03:36:28: ISAKMP (0:1): sending packet to 209.165.200.225 (R) CONF_XAUTH 03:36:28: ISAKMP (0:1): Input = IKE_MESG_FROM_AAA, IKE_AAA_CONT_LOGIN Old State = IKE_XAUTH_AAA_CONT_LOGIN_AWAIT New State = IKE_XAUTH_SET_SENT 03:36:28: ISAKMP (0:1): received packet from 209.165.200.225 (R) CONF_XAUTH 03:36:28: ISAKMP (0:1): processing transaction payload from 209.165.200.225. message ID = 1490194005 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ISAKMP: Config payload ACK 03:36:28: ISAKMP (0:1): XAUTH ACK Processed 03:36:28: ISAKMP (0:1): deleting node 1490194005 error FALSE reason "done with transaction" 03:36:28: ISAKMP (0:1): Input = IKE_MESG_FROM_PEER, IKE_CFG_ACK Old State = IKE_XAUTH_SET_SENT New State = IKE_P1_COMPLETE 03:36:28: ISAKMP (0:1): received packet from 209.165.200.225 (R) QM_IDLE 03:36:28: ISAKMP (0:1): processing transaction payload from 209.165.200.225. message ID = 113305927 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ISAKMP: Config payload REQUEST 03:36:28: ISAKMP (0:1): checking request: 03:36:28: ISAKMP: IP4_DNS 03:36:28: ISAKMP: IP4_DNS 03:36:28: ISAKMP: IP4_NBNS 03:36:28: ISAKMP: IP4_NBNS 03:36:28: ISAKMP: SPLIT_INCLUDE 03:36:28: ISAKMP: DEFAULT_DOMAIN 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7005 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7007 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7800 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7801 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7802 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7803 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7804 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7805 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7806 03:36:28: ISAKMP: UNKNOWN Unknown Attr: 0x7009 03:36:28: ISAKMP: APPLICATION_VERSION 03:36:28: ISAKMP (0:1): Input = IKE_MESG_FROM_PEER, IKE_CFG_REQUEST Old State = IKE_P1_COMPLETE New State = IKE_CONFIG_AUTHOR_AAA_AWAIT 03:36:28: ISAKMP (0:1): Unknown Input: state = IKE_CONFIG_AUTHOR_AAA_AWAIT, major, minor = IKE_MESG_INTERNAL, IKE_PHASE1_COMPLETE 03:36:28: ISAKMP: got callback 1 03:36:28: ISAKMP (0:1): Config attributes requested but config attributes not in crypto map. Sending empty reply. 03:36:28: ISAKMP (0:1): attributes sent in message: 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7005) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7007) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7800) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7801) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7802) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7803) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7804) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7805) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7806) 03:36:28: ISAKMP: Unknown Attr: UNKNOWN (0x7009) 03:36:28: ISAKMP: Sending APPLICATION_VERSION string: Cisco Internetwork Operating System Software IOS (tm) 3600 Software (C3640-JK9S-M), Version 12.2(8)T1, RELEASE SOFTWARE (fc2) TAC Support: http://www.cisco.com/tac Copyright (c) 1986-2002 by cisco Systems, Inc. Compiled Sun 31-Mar-02 03:30 by ccai 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ISAKMP (0:1): responding to peer config from 209.165.200.225. ID = 113305927 03:36:28: ISAKMP (0:1): sending packet to 209.165.200.225 (R) CONF_ADDR 03:36:28: ISAKMP (0:1): deleting node 113305927 error FALSE reason "" 03:36:28: ISAKMP (0:1): Input = IKE_MESG_FROM_AAA, IKE_AAA_GROUP_ATTR Old State = IKE_CONFIG_AUTHOR_AAA_AWAIT New State = IKE_P1_COMPLETE 03:36:28: ISAKMP (0:1): received packet from 209.165.200.225 (R) QM_IDLE 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ISAKMP (0:1): processing HASH payload. message ID = 1022849755 03:36:28: ISAKMP (0:1): processing SA payload. message ID = 1022849755 !--- ISAKMP now verifies the IPsec proposal !--- to see if it is acceptable. 03:36:28: ISAKMP (0:1): Checking IPsec proposal 1 03:36:28: ISAKMP: transform 1, ESP_3DES 03:36:28: ISAKMP: attributes in transform: 03:36:28: ISAKMP: SA life type in seconds 03:36:28: ISAKMP: SA life duration (VPI) of 0x7F 0xFF 0xFF 0xFF 03:36:28: ISAKMP: encaps is 1 03:36:28: ISAKMP: authenticator is HMAC-SHA 03:36:28: validate proposal 0 03:36:28: ISAKMP (0:1): atts are acceptable. !--- As the attributes are acceptable, ISAKMP asks !--- IPsec to validate the proposal. 03:36:28: IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 209.165.202.129, remote= 209.165.200.225, local_proxy= 209.165.202.129/255.255.255.255/0/0 (type=1), remote_proxy= 209.165.200.225/255.255.255.255/0/0

(type=1), protocol= ESP, transform= esp-3des esp-sha-hmac , lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4 03:36:28: validate proposal request 0 03:36:28: ISAKMP (0:1): processing NONCE payload. message ID = 1022849755 03:36:28: ISAKMP (0:1): processing ID payload. message ID = 1022849755 03:36:28: ISAKMP (0:1): asking for 1 spis from ipsec 03:36:28: ISAKMP (0:1): Node 1022849755, Input = IKE_MSG_FROM_PEER, IKE_QM_EXCH Old State = IKE_QM_READY New State = IKE_QM_SPI_STARVE 03:36:28: IPSEC(key_engine): got a queue event... 03:36:28: IPSEC(spi_response): getting spi 1910172102 for SA from 209.165.202.129 to 209.165.200.225 for prot 3 03:36:28: ISAKMP: received ke message (2/1) 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ISAKMP (0:1): sending packet to 209.165.200.225 (R) QM_IDLE 03:36:28: ISAKMP (0:1): Node 1022849755, Input = IKE_MSG_FROM_IPSEC, IKE_SPI_REPLY Old State = IKE_QM_SPI_STARVE New State = IKE_QM_R_QM2 03:36:28: ISAKMP (0:1): received packet from 209.165.200.225 (R) QM_IDLE 03:36:28: CryptoEngine0: generate hmac context for conn id 1 03:36:28: ipsec allocate flow 0 03:36:28: ipsec allocate flow 0 *!--- After IPSec validates the proposal, !--- IPSec proceeds to create the IPSec SAs.* 03:36:28: ISAKMP (0:1): Creating IPsec SAs 03:36:28: inbound SA from 209.165.200.225 to 209.165.202.129 (proxy 209.165.200.225 to 209.165.202.129) 03:36:28: has spi 0x71DAE9C6 and conn_id 2000 and flags 4 03:36:28: lifetime of 2147483647 seconds 03:36:28: outbound SA from 209.165.202.129 to 209.165.200.225 (proxy 209.165.202.129 to 209.165.200.225) 03:36:28: has spi 101033821 and conn_id 2001 and flags C 03:36:28: lifetime of 2147483647 seconds 03:36:28: ISAKMP (0:1): deleting node 1022849755 error FALSE reason "quick mode done (await())" 03:36:28: ISAKMP (0:1): Node 1022849755, Input = IKE_MSG_FROM_PEER, IKE_QM_EXCH Old State = IKE_QM_R_QM2 New State = IKE_QM_PHASE2_COMPLETE 03:36:28: IPSEC(key_engine): got a queue event... 03:36:28: IPSEC(initialize_sas): , (key eng. msg.) INBOUND local= 209.165.202.129, remote= 209.165.200.225, *!--- This is the management tunnel. local_proxy= 209.165.202.129/0.0.0.0/0/0 (type=1), remote_proxy= 209.165.200.225/0.0.0.0/0/0 (type=1),* protocol= ESP, transform= esp-3des esp-sha-hmac , lifedur= 2147483647s and 0kb, spi= 0x71DAE9C6(1910172102), conn_id= 2000, keysize= 0, flags= 0x4 03:36:28: IPSEC(initialize_sas): , (key eng. msg.) OUTBOUND local= 209.165.202.129, remote= 209.165.200.225, local_proxy= 209.165.202.129/0.0.0.0/0/0 (type=1), remote_proxy= 209.165.200.225/0.0.0.0/0/0 (type=1), protocol= ESP, transform= esp-3des esp-sha-hmac , lifedur= 2147483647s and 0kb, spi= 0x605A75D(101033821), conn_id= 2001, keysize= 0, flags= 0xC 03:36:28: IPSEC(create_sa): sa created, (sa) sa_dest= 209.165.202.129, sa_prot= 50, sa_spi= 0x71DAE9C6(1910172102), sa_trans= esp-3des esp-sha-hmac , sa_conn_id= 2000 03:36:28: IPSEC(create_sa): sa created, (sa) sa_dest= 209.165.200.225, sa_prot= 50, sa_spi= 0x605A75D(101033821), sa_trans= esp-3des esp-sha-hmac , sa_conn_id= 2001 03:36:28: ISAKMP: received ke message (4/1) 03:36:28: ISAKMP: Locking CONFIG struct 0x631B752C for crypto_ikmp_config_handle_kei_mess, count 2 03:36:32: ISAKMP (0:1): received packet from 209.165.200.225 (R) QM_IDLE 03:36:32: CryptoEngine0: generate hmac context for conn id 1 03:36:32: ISAKMP (0:1): processing HASH payload. message ID = 852253052 03:36:32: ISAKMP (0:1): processing SA payload. message ID = 852253052 03:36:32: ISAKMP (0:1): Checking IPsec proposal 1 03:36:32: ISAKMP: transform 1, ESP_3DES 03:36:32: ISAKMP: attributes in transform: 03:36:32: ISAKMP: SA life type in seconds 03:36:32: ISAKMP: SA life duration (VPI) of 0x7F 0xFF 0xFF 0xFF 03:36:32: ISAKMP: encaps is 1 03:36:32: ISAKMP: authenticator is HMAC-SHA 03:36:32: validate proposal 0 03:36:32: ISAKMP (0:1): atts are acceptable. 03:36:32: IPSEC(validate_proposal_request): proposal part #1, (key eng. msg.) INBOUND local= 209.165.202.129, remote= 209.165.200.225, local_proxy= 0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy= 10.48.66.0/255.255.254.0/0/0 (type=4), protocol= ESP, transform= esp-3des esp-sha-hmac , lifedur= 0s and 0kb, spi= 0x0(0), conn_id= 0, keysize= 0, flags= 0x4 03:36:32: validate proposal request 0 03:36:32: ISAKMP (0:1): processing NONCE payload. message ID = 852253052 03:36:32: ISAKMP (0:1): processing ID payload. message ID = 852253052 03:36:32: ISAKMP (0:1): processing ID payload. message ID = 852253052 03:36:32: ISAKMP (0:1): asking for 1 spis from ipsec 03:36:32: ISAKMP (0:1): Node 852253052, Input = IKE_MSG_FROM_PEER, IKE_QM_EXCH Old State = IKE_QM_READY New State = IKE_QM_SPI_STARVE 03:36:32: IPSEC(key_engine): got a queue event... 03:36:32: IPSEC(spi_response): getting spi 3997625134 for SA from 209.165.202.129 to 209.165.200.225 for prot 3 03:36:32: ISAKMP: received ke message (2/1) 03:36:32: CryptoEngine0: generate hmac context for conn id 1 03:36:32: ISAKMP (0:1): sending packet to 209.165.200.225 (R) QM_IDLE 03:36:32: ISAKMP (0:1): Node 852253052, Input = IKE_MSG_FROM_IPSEC, IKE_SPI_REPLY Old State = IKE_QM_SPI_STARVE New State = IKE_QM_R_QM2 03:36:32: ISAKMP (0:1): received packet from 209.165.200.225 (R) QM_IDLE 03:36:32: CryptoEngine0: generate hmac context for conn id 1 03:36:32: ipsec allocate flow 0 03:36:32: ipsec allocate flow 0 03:36:32: ISAKMP (0:1): Creating IPsec SAs 03:36:32: inbound SA from 209.165.200.225 to 209.165.202.129 (proxy 10.48.66.0 to 0.0.0.0) 03:36:32: has spi 0xEE46EB2E and conn_id 2002 and flags 4 03:36:32: lifetime of 2147483647 seconds 03:36:32: outbound SA from 209.165.202.129 to 209.165.200.225 (proxy 0.0.0.0 to 10.48.66.0) 03:36:32: has spi 674305339 and conn_id 2003 and flags C 03:36:32: lifetime of 2147483647 seconds 03:36:32: ISAKMP (0:1): deleting node 852253052 error FALSE reason "quick

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mode done (await())" 03:36:32: ISAKMP (0:1): Node 852253052, Input = IKE_MSG_FROM_PEER,
IKE_QM_EXCH Old State = IKE_QM_R_QM2 New State = IKE_QM_PHASE2_COMPLETE 03:36:32:
IPSEC(key_engine): got a queue event... !--- IPsec now initializes the SAs as these are !---
stored in the SA Database. 03:36:32: IPSEC(initialize_sas): , (key eng. msg.) INBOUND local=
209.165.202.129, remote= 209.165.200.225, !--- This SA is for the actual data traffic between
the !--- networks behind the VPN Client and the Cisco IOS router. local_proxy=
0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy= 10.48.66.0/255.255.254.0/0/0 (type=4), protocol=
ESP, transform= esp-3des esp-sha-hmac , lifedur= 2147483647s and 0kb, spi=
0xEE46EB2E(3997625134), conn_id= 2002, keysize= 0, flags= 0x4 03:36:32: IPSEC(initialize_sas): ,
(key eng. msg.) OUTBOUND local= 209.165.202.129, remote= 209.165.200.225, local_proxy=
0.0.0.0/0.0.0.0/0/0 (type=4), remote_proxy= 10.48.66.0/255.255.254.0/0/0 (type=4), protocol=
ESP, transform= esp-3des esp-sha-hmac , lifedur= 2147483647s and 0kb, spi=
0x2831153B(674305339), conn_id= 2003, keysize= 0, flags= 0xC 03:36:32: IPSEC(create_sa): sa
created, (sa) sa_dest= 209.165.202.129, sa_prot= 50, sa_spi= 0xEE46EB2E(3997625134), sa_trans=
esp-3des esp-sha-hmac , sa_conn_id= 2002 03:36:32: IPSEC(create_sa): sa created, (sa) sa_dest=
209.165.200.225, sa_prot= 50, sa_spi= 0x2831153B(674305339), sa_trans= esp-3des esp-sha-hmac ,
sa_conn_id= 2003 03:36:32: ISAKMP: received ke message (4/1) 03:36:32: ISAKMP: Locking CONFIG
struct 0x631B752C for crypto_ikmp_config_handle_kei_mess, count 3

```

Отладки аппаратного клиента VPN 3002

От GUI Клиента VPN выберите **Configuration> System> Events> Classes** и включите **IKE, IKEDBG, IPSEC** и **IPSECDBG** на уровне **13** к **СИСТЕМНОМУ ЖУРНАЛУ**. Не забудьте отключать отладки после того, как ваше тестирование будет завершено.

Отладки аппаратного клиента VPN 3002

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297 06/03/2002 11:02:30.100 SEV=7 IPSECDBG/14 RPT=3
!--- The VPN Client attempts to connect to the headend.
!--- In this case, it is Cisco IOS. Sending KEY_ACQUIRE
to IKE for src 209.165.200.225, dst 209.165.202.129 298
06/03/2002 11:02:30.100 SEV=8 IKEDBG/0 RPT=108 pitcher:
received a key acquire message! 299 06/03/2002
11:02:30.100 SEV=4 IKE/41 RPT=135 209.165.202.129 IKE
Initiator: New Phase 1, Intf 2, IKE Peer 209.165.202.129
local Proxy Address 209.165.200.225, remote Proxy
Address 209.165.202.129, SA (ESP-3DES-MD5) 302
06/03/2002 11:02:30.100 SEV=9 IKEDBG/0 RPT=109
209.165.202.129 constructing ISA_SA for isakmp 303
06/03/2002 11:02:30.230 SEV=9 IKEDBG/0 RPT=110
209.165.202.129 constructing ke payload 304 06/03/2002
11:02:30.230 SEV=9 IKEDBG/1 RPT=30 209.165.202.129
constructing nonce payload 305 06/03/2002 11:02:30.230
SEV=9 IKEDBG/1 RPT=31 209.165.202.129 constructing ID
306 06/03/2002 11:02:30.230 SEV=9 IKEDBG/46 RPT=4
209.165.202.129 constructing xauth V6 VID payload 307
06/03/2002 11:02:30.230 SEV=9 IKEDBG/46 RPT=5
209.165.202.129 constructing VID payload 308 06/03/2002
11:02:30.230 SEV=9 IKEDBG/48 RPT=2 209.165.202.129 Send
Cisco Unity client VID 309 06/03/2002 11:02:30.230 SEV=8
IKEDBG/0 RPT=111 209.165.202.129 SENDING Message
(msgid=0) with payloads : HDR + SA (1) + KE (4) + NONCE
(10) + ID (5) + VENDOR (13) + VENDOR (13) + NONE (0)
... total length : 541 312 06/03/2002 11:02:30.520 SEV=8
IKEDBG/0 RPT=112 209.165.202.129 RECEIVED Message
(msgid=0) with payloads : HDR + SA (1) + VENDOR (13) +
VENDOR (13) + VENDOR (13) + KE (4) + ID
(5) + NONCE (10) + HASH (8) + NONE (0) ... total length
: 348 315 06/03/2002 11:02:30.530 SEV=8 IKEDBG/0 RPT=113
209.165.202.129 RECEIVED Message (msgid=0) with payloads
: HDR + SA (1) + VENDOR (13) + VENDOR (13) + VENDOR (13)
+ VENDOR (13) + KE (4) + ID (5) + NONCE (10) + HASH (8)
+ NONE (0) ... total length : 348 318 06/03/2002

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11:02:30.530 SEV=9 IKEDBG/0 RPT=114 209.165.202.129
processing SA payload 319 06/03/2002 11:02:30.530 SEV=7
IKEDBG/0 RPT=115 209.165.202.129 Oakley proposal is
acceptable 320 06/03/2002 11:02:30.530 SEV=9 IKEDBG/47
RPT=5 209.165.202.129 processing VID payload 321
06/03/2002 11:02:30.530 SEV=9 IKEDBG/49 RPT=4
209.165.202.129 Received Cisco Unity client VID 322
06/03/2002 11:02:30.530 SEV=9 IKEDBG/47 RPT=6
209.165.202.129 processing VID payload 323 06/03/2002
11:02:30.530 SEV=9 IKEDBG/49 RPT=5 209.165.202.129
Received DPD VID 324 06/03/2002 11:02:30.530 SEV=9
IKEDBG/47 RPT=7 209.165.202.129 processing VID payload
325 06/03/2002 11:02:30.530 SEV=9 IKEDBG/38 RPT=2
209.165.202.129 Processing IOS/PIX Vendor ID payload
(version: 1.0.0, capabilities: 0000007f) 326 06/03/2002
11:02:30.530 SEV=9 IKEDBG/47 RPT=8 209.165.202.129
processing VID payload 327 06/03/2002 11:02:30.530 SEV=9
IKEDBG/49 RPT=6 209.165.202.129 !--- The VPN Client
understands that it needs !--- to go through Extended
authentication to !--- bring the tunnel up. Received
xauth V6 VID 328 06/03/2002 11:02:30.530 SEV=9 IKEDBG/0
RPT=116 209.165.202.129 processing ke payload 329
06/03/2002 11:02:30.530 SEV=9 IKEDBG/0 RPT=117
209.165.202.129 processing ISA_KE 330 06/03/2002
11:02:30.530 SEV=9 IKEDBG/1 RPT=32 209.165.202.129
Processing ID 331 06/03/2002 11:02:30.530 SEV=9 IKEDBG/1
RPT=33 209.165.202.129 processing nonce payload 332
06/03/2002 11:02:30.660 SEV=9 IKEDBG/0 RPT=118
209.165.202.129 Generating keys for Initiator... 333
06/03/2002 11:02:30.670 SEV=9 IKEDBG/0 RPT=119
209.165.202.129 Group [209.165.202.129] processing hash
334 06/03/2002 11:02:30.670 SEV=9 IKEDBG/0 RPT=120
209.165.202.129 Group [209.165.202.129] computing hash
335 06/03/2002 11:02:30.680 SEV=9 IKEDBG/0 RPT=121 Group
[209.165.202.129] construct hash payload 336 06/03/2002
11:02:30.680 SEV=9 IKEDBG/0 RPT=122 209.165.202.129
Group [209.165.202.129] computing hash 337 06/03/2002
11:02:30.680 SEV=9 IKEDBG/46 RPT=6 209.165.202.129 Group
[209.165.202.129] constructing dpd vid payload 338
06/03/2002 11:02:30.680 SEV=8 IKEDBG/0 RPT=123
209.165.202.129 SENDING Message (msgid=0) with payloads
: HDR + HASH (8) + NOTIFY (11) + VENDOR (13) + NONE (0)
... total length : 100 340 06/03/2002 11:02:30.690 SEV=8
IKEDBG/0 RPT=124 209.165.202.129 RECEIVED Message
(msgid=71c8c9fd) with payloads : HDR + HASH (8) + NOTIFY
(11) + NONE (0) ... total length : 92 342 06/03/2002
11:02:30.690 SEV=9 IKEDBG/0 RPT=125 209.165.202.129
Group [209.165.202.129] processing hash 343 06/03/2002
11:02:30.690 SEV=9 IKEDBG/0 RPT=126 209.165.202.129
Group [209.165.202.129] Processing Notify payload 344
06/03/2002 11:02:30.690 SEV=5 IKE/73 RPT=19
209.165.202.129 Group [209.165.202.129] !--- As IOS has
a default IKE time of 1 day (86400) seconds !--- and
forces the VPN Client to accept this value. !--- This is
because Cisco IOS responds and the VPN Client initiates.
Responder forcing change of IKE rekeying duration from
2147483647 to 86400 seconds 347 06/03/2002 11:02:30.690
SEV=6 IKE/0 RPT=2 AM AM:843f96f6 received unexpected
event EV_RESET_LIFETIME in state AM_RSND_LST_MSG 349
06/03/2002 11:02:30.700 SEV=8 IKEDBG/0 RPT=127
209.165.202.129 RECEIVED Message (msgid=ecb5af46) with
payloads : HDR + HASH (8) + ATTR (14) + NONE (0) ...
total length : 86 351 06/03/2002 11:02:30.700 SEV=9
IKEDBG/1 RPT=34 process_attr(): Enter! 352 06/03/2002
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11:02:30.700 SEV=9 IKEDBG/1 RPT=35 Processing cfg
Request attributes 353 06/03/2002 11:02:30.700 SEV=9
IKEDBG/1 RPT=36 Received Xauth Type in request! 354
06/03/2002 11:02:30.700 SEV=9 IKEDBG/1 RPT=37 Received
Xauth Message! 355 06/03/2002 11:02:30.700 SEV=9
IKEDBG/1 RPT=38 Received Xauth Username request! 356
06/03/2002 11:02:30.700 SEV=9 IKEDBG/1 RPT=39 Received
Xauth Password request! 357 06/03/2002 11:02:30.700
SEV=9 IKEDBG/0 RPT=128 209.165.202.129 Group
[209.165.202.129] constructing blank hash 358 06/03/2002
11:02:30.700 SEV=9 IKEDBG/0 RPT=129 209.165.202.129
Group [209.165.202.129] constructing qm hash 359
06/03/2002 11:02:30.700 SEV=8 IKEDBG/0 RPT=130
209.165.202.129 SENDING Message (msgid=ecb5af46) with
payloads : HDR + HASH (8) + ATTR (14) + NONE (0) ...
total length : 77 361 06/03/2002 11:02:30.710 SEV=8
IKEDBG/0 RPT=131 209.165.202.129 RECEIVED Message
(msgid=ad808e58) with payloads : HDR + HASH (8) + ATTR
(14) + NONE (0) ... total length : 64 363 06/03/2002
11:02:30.710 SEV=9 IKEDBG/1 RPT=40 process_attr():
Enter! 364 06/03/2002 11:02:30.710 SEV=9 IKEDBG/1 RPT=41
Processing cfg Request attributes 365 06/03/2002
11:02:30.710 SEV=9 IKEDBG/1 RPT=42 Received Xauth Status
Set! 366 06/03/2002 11:02:30.710 SEV=9 IKEDBG/0 RPT=132
209.165.202.129 Group [209.165.202.129] constructing
blank hash 367 06/03/2002 11:02:30.710 SEV=9 IKEDBG/0
RPT=133 209.165.202.129 Group [209.165.202.129]
constructing qm hash 368 06/03/2002 11:02:30.710 SEV=8
IKEDBG/0 RPT=134 209.165.202.129 SENDING Message
(msgid=ad808e58) with payloads : HDR + HASH (8) + ATTR
(14) + NONE (0) ... total length : 60 370 06/03/2002
11:02:30.720 SEV=9 IKEDBG/0 RPT=135 209.165.202.129
Group [209.165.202.129] constructing blank hash 371
06/03/2002 11:02:30.720 SEV=9 IKEDBG/0 RPT=136
209.165.202.129 Group [209.165.202.129] constructing qm
hash 372 06/03/2002 11:02:30.720 SEV=8 IKEDBG/0 RPT=137
209.165.202.129 SENDING Message (msgid=30ce63a8) with
payloads : HDR + HASH (8) + ATTR (14) + NONE (0) ...
total length : 231 374 06/03/2002 11:02:30.740 SEV=8
IKEDBG/0 RPT=138 209.165.202.129 RECEIVED Message
(msgid=30ce63a8) with payloads : HDR + HASH (8) + ATTR
(14) + NONE (0) ... total length : 313 376 06/03/2002
11:02:30.740 SEV=9 IKEDBG/1 RPT=43 process_attr():
Enter! 377 06/03/2002 11:02:30.740 SEV=9 IKEDBG/1 RPT=44
Processing MODE_CFG Reply attributes !--- The VPN Client
processes the mode !--- configuration reply attributes
sent by Cisco IOS. 378 06/03/2002 11:02:30.740 SEV=6
IKE/130 RPT=2 209.165.202.129 Group [209.165.202.129]
Received unsupported transaction mode attribute: 7 379
06/03/2002 11:02:30.740 SEV=5 IKE/115 RPT=7
209.165.202.129 Group [209.165.202.129] Client rejected
NAT enabled IPsec request, falling back to standard
IPsec 381 06/03/2002 11:02:30.740 SEV=3 AUTH/24 RPT=7
Tunnel to headend device 209.165.202.129 connected 382
06/03/2002 11:02:30.740 SEV=9 IKEDBG/0 RPT=139
209.165.202.129 Group [209.165.202.129] Oakley begin
quick mode 383 06/03/2002 11:02:30.740 SEV=4 IKE/119
RPT=7 209.165.202.129 Group [209.165.202.129] !--- Phase
1 is complete. 384 06/03/2002 11:02:30.740 SEV=6 IKE/121
RPT=2 209.165.202.129 Keep-alive type for this
connection: DPD 385 06/03/2002 11:02:30.740 SEV=7
IKEDBG/0 RPT=140 209.165.202.129 Group [209.165.202.129]
Starting phase 1 rekey timer: 73440000 (ms) 386
06/03/2002 11:02:30.740 SEV=9 IPSECDBG/6 RPT=15 IPSEC
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key message parse - msgtype 6, len 200, vers 1, pid
00000000, seq 13, err 0, type 2, mode 0, state 32, label
0, pad 0, spi 00000000, encrKeyLen 0, hashKey Len 0,
ivlen 0, alg 0, hmacAlg 0, lifetype 0, lifetime1 662488,
lifetime2 0, dsI d 300 390 06/03/2002 11:02:30.740 SEV=9
IPSECDBG/1 RPT=47 Processing KEY_GETSPI msg! 391
06/03/2002 11:02:30.740 SEV=7 IPSECDBG/13 RPT=3 Reserved
SPI 1608220759 392 06/03/2002 11:02:30.740 SEV=8
IKEDBG/6 RPT=3 IKE got SPI from key engine: SPI =
0x5fdb8057 393 06/03/2002 11:02:30.750 SEV=9 IKEDBG/0
RPT=141 209.165.202.129 Group [209.165.202.129] oakley
constucting quick mode 394 06/03/2002 11:02:30.750 SEV=9
IKEDBG/0 RPT=142 209.165.202.129 Group [209.165.202.129]
constructing blank hash 395 06/03/2002 11:02:30.750
SEV=9 IKEDBG/0 RPT=143 209.165.202.129 Group
[209.165.202.129] constructing ISA_SA for ipsec 396
06/03/2002 11:02:30.750 SEV=9 IKEDBG/1 RPT=45
209.165.202.129 Group [209.165.202.129] constructing
ipsec nonce payload 397 06/03/2002 11:02:30.750 SEV=9
IKEDBG/1 RPT=46 209.165.202.129 Group [209.165.202.129]
constructing proxy ID 398 06/03/2002 11:02:30.750 SEV=7
IKEDBG/0 RPT=144 209.165.202.129 Group [209.165.202.129]
Transmitting Proxy Id: !--- This is the SA for
management between !--- the VPN Client and Cisco IOS.
Local host: 209.165.200.225 Protocol 0 Port 0 Remote
host: 209.165.202.129 Protocol 0 Port 0 402 06/03/2002
11:02:30.750 SEV=9 IKEDBG/0 RPT=145 209.165.202.129
Group [209.165.202.129] constructing qm hash 403
06/03/2002 11:02:30.750 SEV=8 IKEDBG/0 RPT=146
209.165.202.129 SENDING Message (msgid=e429a70e) with
payloads : HDR + HASH (8) + SA (1) + NONCE (10) + ID (5)
+ ID (5) + NONE (0) ... total leng th : 292 406
06/03/2002 11:02:31.010 SEV=8 IKEDBG/0 RPT=147
209.165.202.129 RECEIVED Message (msgid=e429a70e) with
payloads : HDR + HASH (8) + SA (1) + NONCE (10) + ID (5)
+ ID (5) + NOTIFY (11) + NONE (0) ... total length : 192
409 06/03/2002 11:02:31.010 SEV=9 IKEDBG/0 RPT=148
209.165.202.129 Group [209.165.202.129] processing hash
410 06/03/2002 11:02:31.010 SEV=9 IKEDBG/0 RPT=149
209.165.202.129 Group [209.165.202.129] processing SA
payload 411 06/03/2002 11:02:31.020 SEV=9 IKEDBG/1
RPT=47 209.165.202.129 Group [209.165.202.129]
processing nonce payload 412 06/03/2002 11:02:31.020
SEV=9 IKEDBG/1 RPT=48 209.165.202.129 Group
[209.165.202.129] Processing ID 413 06/03/2002
11:02:31.020 SEV=9 IKEDBG/1 RPT=49 209.165.202.129 Group
[209.165.202.129] Processing ID 414 06/03/2002
11:02:31.020 SEV=9 IKEDBG/0 RPT=150 209.165.202.129
Group [209.165.202.129] Processing Notify payload 415
06/03/2002 11:02:31.020 SEV=5 IKE/73 RPT=20
209.165.202.129 Group [209.165.202.129] Responder
forcing change of IPSec rekeying duration from
2147483647 to 3600 seco nds 418 06/03/2002 11:02:31.020
SEV=9 IKEDBG/0 RPT=151 209.165.202.129 Group
[209.165.202.129] loading all IPSEC SAs 419 06/03/2002
11:02:31.020 SEV=9 IKEDBG/1 RPT=50 209.165.202.129 Group
[209.165.202.129] Generating Quick Mode Key! 420
06/03/2002 11:02:31.020 SEV=9 IKEDBG/1 RPT=51
209.165.202.129 Group [209.165.202.129] Generating Quick
Mode Key! 421 06/03/2002 11:02:31.020 SEV=7 IKEDBG/0
RPT=152 209.165.202.129 Group [209.165.202.129] Loading
host: Dst: 209.165.202.129 Src: 209.165.200.225 423
06/03/2002 11:02:31.020 SEV=4 IKE/49 RPT=13
209.165.202.129 Group [209.165.202.129] Security
```

```
negotiation complete for peer (209.165.202.129)
Initiator, Inbound SPI = 0x5fdb8057, Outbound SPI =
0xa088f2dc 426 06/03/2002 11:02:31.020 SEV=9 IKEDBG/0
RPT=153 209.165.202.129 Group [209.165.202.129] oakley
constructing final quick mode 427 06/03/2002
11:02:31.030 SEV=8 IKEDBG/0 RPT=154 209.165.202.129
SENDING Message (msgid=e429a70e) with payloads : HDR +
HASH (8) + NONE (0) ... total length : 76 429 06/03/2002
11:02:31.030 SEV=9 IPSECDBG/6 RPT=16 IPSEC key message
parse - msgtype 1, len 612, vers 1, pid 00000000, seq 0,
err 0 , type 2, mode 1, state 64, label 0, pad 0, spi
a088f2dc, encrKeyLen 24, hashKey Len 20, ivlen 8, alg 2,
hmacAlg 4, lifetype 0, lifetime1 662488, lifetime2 0, ds
Id -378167296 433 06/03/2002 11:02:31.030 SEV=9
IPSECDBG/1 RPT=48 Processing KEY_ADD msg! 434 06/03/2002
11:02:31.030 SEV=9 IPSECDBG/1 RPT=49
key_msghdr2secassoc(): Enter 435 06/03/2002 11:02:31.030
SEV=7 IPSECDBG/1 RPT=50 No USER filter configured 436
06/03/2002 11:02:31.030 SEV=9 IPSECDBG/1 RPT=51
KeyProcessAdd: Enter 437 06/03/2002 11:02:31.030 SEV=8
IPSECDBG/1 RPT=52 KeyProcessAdd: Adding outbound SA 438
06/03/2002 11:02:31.030 SEV=8 IPSECDBG/1 RPT=53
KeyProcessAdd: src 209.165.200.225 mask 0.0.0.0, dst
209.165.202.129 mask 0.0.0.0 440 06/03/2002
11:02:31.030 SEV=8 IPSECDBG/1 RPT=54 KeyProcessAdd:
FilterIpsecAddIkeSa success 441 06/03/2002 11:02:31.030
SEV=9 IPSECDBG/6 RPT=17 IPSEC key message parse -
msgtype 3, len 332, vers 1, pid 00000000, seq 0, err 0 ,
type 2, mode 1, state 32, label 0, pad 0, spi 5fdb8057,
encrKeyLen 24, hashKey Len 20, ivlen 8, alg 2, hmacAlg
4, lifetype 0, lifetime1 662488, lifetime2 0, ds Id -
378167296 445 06/03/2002 11:02:31.030 SEV=9 IPSECDBG/1
RPT=55 Processing KEY_UPDATE msg! 446 06/03/2002
11:02:31.030 SEV=9 IPSECDBG/1 RPT=56 Update inbound SA
addresses 447 06/03/2002 11:02:31.030 SEV=9 IPSECDBG/1
RPT=57 key_msghdr2secassoc(): Enter 448 06/03/2002
11:02:31.030 SEV=7 IPSECDBG/1 RPT=58 No USER filter
configured 449 06/03/2002 11:02:31.030 SEV=9 IPSECDBG/1
RPT=59 KeyProcessUpdate: Enter 450 06/03/2002
11:02:31.030 SEV=8 IPSECDBG/1 RPT=60 KeyProcessUpdate:
success 451 06/03/2002 11:02:31.030 SEV=8 IKEDBG/7 RPT=3
IKE got a KEY_ADD msg for SA: SPI = 0xa088f2dc 452
06/03/2002 11:02:31.030 SEV=8 IKEDBG/0 RPT=155 pitcher:
rcv KEY_UPDATE, spi 0x5fdb8057 453 06/03/2002
11:02:31.040 SEV=4 IKE/120 RPT=13 209.165.202.129 Group
[209.165.202.129] PHASE 2 COMPLETED (msgid=e429a70e) !--
- This line indicates that SA establishment !--- for
management between the VPN Client and Cisco IOS is
complete. 454 06/03/2002 11:02:35.040 SEV=7 IPSECDBG/10
RPT=4 IPSEC ipsec_output() can call key_acquire()
because 4 seconds have elapsed since last IKE
negotiation began (src 0x0a3042b9, dst 0x00a66e24) 456
06/03/2002 11:02:35.040 SEV=7 IPSECDBG/14 RPT=4 Sending
KEY_ACQUIRE to IKE for src 10.48.66.185, dst 0.0.0.0 457
06/03/2002 11:02:35.040 SEV=8 IKEDBG/0 RPT=156 pitcher:
received a key acquire message! 458 06/03/2002
11:02:35.040 SEV=4 IKE/41 RPT=136 IKE Initiator: New
Phase 2, Intf 2, IKE Peer 209.165.202.129 local Proxy
Address 10.48.66.0, remote Proxy Address 0.0.0.0, SA
(ESP-3DES-MD5) 460 06/03/2002 11:02:35.040 SEV=9
IKEDBG/0 RPT=157 209.165.202.129 Group [209.165.202.129]
Oakley begin quick mode 461 06/03/2002 11:02:35.040
SEV=9 IPSECDBG/6 RPT=18 IPSEC key message parse -
msgtype 6, len 200, vers 1, pid 00000000, seq 14, err 0,
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type 2, mode 0, state 32, label 0, pad 0, spi 00000000,
encrKeyLen 0, hashKey Len 0, ivlen 0, alg 0, hmacAlg 0,
lifetype 0, lifetime1 662488, lifetime2 0, dsI d 300 465
06/03/2002 11:02:35.040 SEV=9 IPSECDBG/1 RPT=61
Processing KEY_GETSPI msg! 466 06/03/2002 11:02:35.040
SEV=7 IPSECDBG/13 RPT=4 Reserved SPI 1819592269 467
06/03/2002 11:02:35.040 SEV=8 IKEDBG/6 RPT=4 IKE got SPI
from key engine: SPI = 0x6c74c64d 468 06/03/2002
11:02:35.040 SEV=9 IKEDBG/0 RPT=158 209.165.202.129
Group [209.165.202.129] oakley constucting quick mode
469 06/03/2002 11:02:35.040 SEV=9 IKEDBG/0 RPT=159
209.165.202.129 Group [209.165.202.129] constructing
blank hash 470 06/03/2002 11:02:35.040 SEV=9 IKEDBG/0
RPT=160 209.165.202.129 Group [209.165.202.129]
constructing ISA_SA for ipsec 471 06/03/2002
11:02:35.040 SEV=9 IKEDBG/1 RPT=52 209.165.202.129 Group
[209.165.202.129] constructing ipsec nonce payload 472
06/03/2002 11:02:35.040 SEV=9 IKEDBG/1 RPT=53
209.165.202.129 Group [209.165.202.129] constructing
proxy ID 473 06/03/2002 11:02:35.040 SEV=7 IKEDBG/0
RPT=161 209.165.202.129 Group [209.165.202.129]
Transmitting Proxy Id: Local subnet: 10.48.66.0 mask
255.255.254.0 Protocol 0 Port 0 Remote subnet: 0.0.0.0
Mask 0.0.0.0 Protocol 0 Port 0 !--- This line indicates
the SA for the traffic between !--- the networks behind
the VPN Client and Cisco IOS. 477 06/03/2002
11:02:35.040 SEV=9 IKEDBG/0 RPT=162 209.165.202.129
Group [209.165.202.129] constructing qm hash 478
06/03/2002 11:02:35.040 SEV=8 IKEDBG/0 RPT=163
209.165.202.129 SENDING Message (msgid=a809c6b4) with
payloads : HDR + HASH (8) + SA (1) + NONCE (10) + ID (5)
+ ID (5) + NONE (0) ... total leng th : 300 481
06/03/2002 11:02:35.310 SEV=8 IKEDBG/0 RPT=164
209.165.202.129 RECEIVED Message (msgid=a809c6b4) with
payloads : HDR + HASH (8) + SA (1) + NONCE (10) + ID (5)
+ ID (5) + NOTIFY (11) + NONE (0) ... total length : 200
484 06/03/2002 11:02:35.310 SEV=9 IKEDBG/0 RPT=165
209.165.202.129 Group [209.165.202.129] processing hash
485 06/03/2002 11:02:35.310 SEV=9 IKEDBG/0 RPT=166
209.165.202.129 Group [209.165.202.129] processing SA
payload 486 06/03/2002 11:02:35.310 SEV=9 IKEDBG/1
RPT=54 209.165.202.129 Group [209.165.202.129]
processing nonce payload 487 06/03/2002 11:02:35.310
SEV=9 IKEDBG/1 RPT=55 209.165.202.129 Group
[209.165.202.129] Processing ID 488 06/03/2002
11:02:35.310 SEV=9 IKEDBG/1 RPT=56 209.165.202.129 Group
[209.165.202.129] Processing ID 489 06/03/2002
11:02:35.310 SEV=9 IKEDBG/0 RPT=167 209.165.202.129
Group [209.165.202.129] Processing Notify payload 490
06/03/2002 11:02:35.310 SEV=5 IKE/73 RPT=21
209.165.202.129 Group [209.165.202.129] Responder
forcing change of IPSec rekeying duration from
2147483647 to 3600 seco nds 493 06/03/2002 11:02:35.310
SEV=9 IKEDBG/0 RPT=168 209.165.202.129 Group
[209.165.202.129] loading all IPSEC SAs 494 06/03/2002
11:02:35.310 SEV=9 IKEDBG/1 RPT=57 209.165.202.129 Group
[209.165.202.129] Generating Quick Mode Key! 495
06/03/2002 11:02:35.320 SEV=9 IKEDBG/1 RPT=58
209.165.202.129 Group [209.165.202.129] Generating Quick
Mode Key! 496 06/03/2002 11:02:35.320 SEV=7 IKEDBG/0
RPT=169 209.165.202.129 Group [209.165.202.129] Loading
subnet: Dst: 0.0.0.0 mask: 0.0.0.0 Src: 10.48.66.0 mask:
255.255.254.0 499 06/03/2002 11:02:35.320 SEV=4 IKE/49
RPT=14 209.165.202.129 Group [209.165.202.129] Security
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negotiation complete for peer (209.165.202.129)
Initiator, Inbound SPI = 0x6c74c64d, Outbound SPI =
0x8e34d356 502 06/03/2002 11:02:35.320 SEV=9 IKEDBG/0
RPT=170 209.165.202.129 Group [209.165.202.129] oakley
constructing final quick mode 503 06/03/2002
11:02:35.320 SEV=8 IKEDBG/0 RPT=171 209.165.202.129
SENDING Message (msgid=a809c6b4) with payloads : HDR +
HASH (8) + NONE (0) ... total length : 76 505 06/03/2002
11:02:35.320 SEV=9 IPSECDBG/6 RPT=19 IPSEC key message
parse - msgtype 1, len 612, vers 1, pid 00000000, seq 0,
err 0 , type 2, mode 1, state 64, label 0, pad 0, spi
8e34d356, encrKeyLen 24, hashKey Len 20, ivlen 8, alg 2,
hmacAlg 4, lifetype 0, lifetime1 662488, lifetime2 0, ds
Id -378167296 509 06/03/2002 11:02:35.330 SEV=9
IPSECDBG/1 RPT=62 Processing KEY_ADD msg! 510 06/03/2002
11:02:35.330 SEV=9 IPSECDBG/1 RPT=63
key_msghdr2secassoc(): Enter 511 06/03/2002 11:02:35.330
SEV=7 IPSECDBG/1 RPT=64 No USER filter configured 512
06/03/2002 11:02:35.330 SEV=9 IPSECDBG/1 RPT=65
KeyProcessAdd: Enter 513 06/03/2002 11:02:35.330 SEV=8
IPSECDBG/1 RPT=66 KeyProcessAdd: Adding outbound SA 514
06/03/2002 11:02:35.330 SEV=8 IPSECDBG/1 RPT=67
KeyProcessAdd: src 10.48.66.0 mask 0.0.1.255, dst
0.0.0.0 mask 255.255.255.255 515 06/03/2002 11:02:35.330
SEV=8 IPSECDBG/1 RPT=68 KeyProcessAdd:
FilterIpsecAddIkeSa success 516 06/03/2002 11:02:35.330
SEV=9 IPSECDBG/6 RPT=20 IPSEC key message parse -
msgtype 3, len 332, vers 1, pid 00000000, seq 0, err 0 ,
type 2, mode 1, state 32, label 0, pad 0, spi 6c74c64d,
encrKeyLen 24, hashKey Len 20, ivlen 8, alg 2, hmacAlg
4, lifetype 0, lifetime1 662488, lifetime2 0, ds Id -
378167296 520 06/03/2002 11:02:35.330 SEV=9 IPSECDBG/1
RPT=69 Processing KEY_UPDATE msg! 521 06/03/2002
11:02:35.330 SEV=9 IPSECDBG/1 RPT=70 Update inbound SA
addresses 522 06/03/2002 11:02:35.330 SEV=9 IPSECDBG/1
RPT=71 key_msghdr2secassoc(): Enter 523 06/03/2002
11:02:35.330 SEV=7 IPSECDBG/1 RPT=72 No USER filter
configured 524 06/03/2002 11:02:35.330 SEV=9 IPSECDBG/1
RPT=73 KeyProcessUpdate: Enter 525 06/03/2002
11:02:35.330 SEV=8 IPSECDBG/1 RPT=74 KeyProcessUpdate:
success 526 06/03/2002 11:02:35.330 SEV=8 IKEDBG/7 RPT=4
IKE got a KEY_ADD msg for SA: SPI = 0x8e34d356 527
06/03/2002 11:02:35.330 SEV=8 IKEDBG/0 RPT=172 pitcher:
rcv KEY_UPDATE, spi 0x6c74c64d 528 06/03/2002
11:02:35.330 SEV=4 IKE/120 RPT=14 209.165.202.129 Group
[209.165.202.129] PHASE 2 COMPLETED (msgid=a809c6b4) !--
- This line indicates that SA establishment !--- for
networks between the VPN Client and Cisco IOS is
complete.
```

Дополнительные сведения

- [Поддержка Cisco VPN 3000 Concentrator](#)
- [Поддержка аппаратного клиента Cisco VPN 3002](#)
- [Страница поддержки IPsec Negotiation/IKE](#)
- [Cisco Systems – техническая поддержка и документация](#)