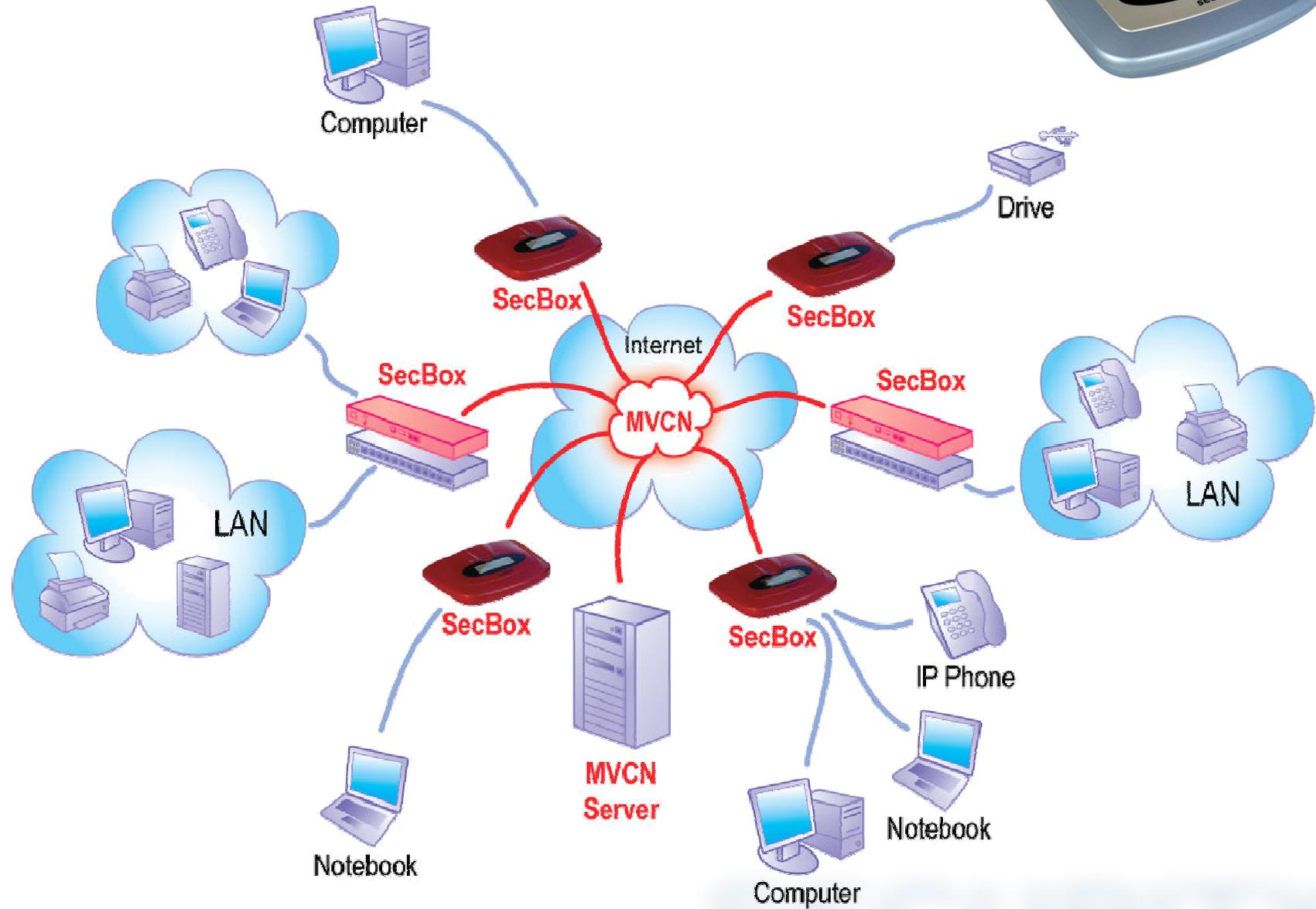


NAVAYO MVCN Technology



**Building private closed secure
virtual network**

MVCN network



Manageable Virtual Closed Network (MVCN)



- Patented or patent pending technology (EU, USA, Canada, Japan, etc.)
- Distributed key mapping technology
- Based on proven RSA mathematical background



SECURITY

Key MVCN features



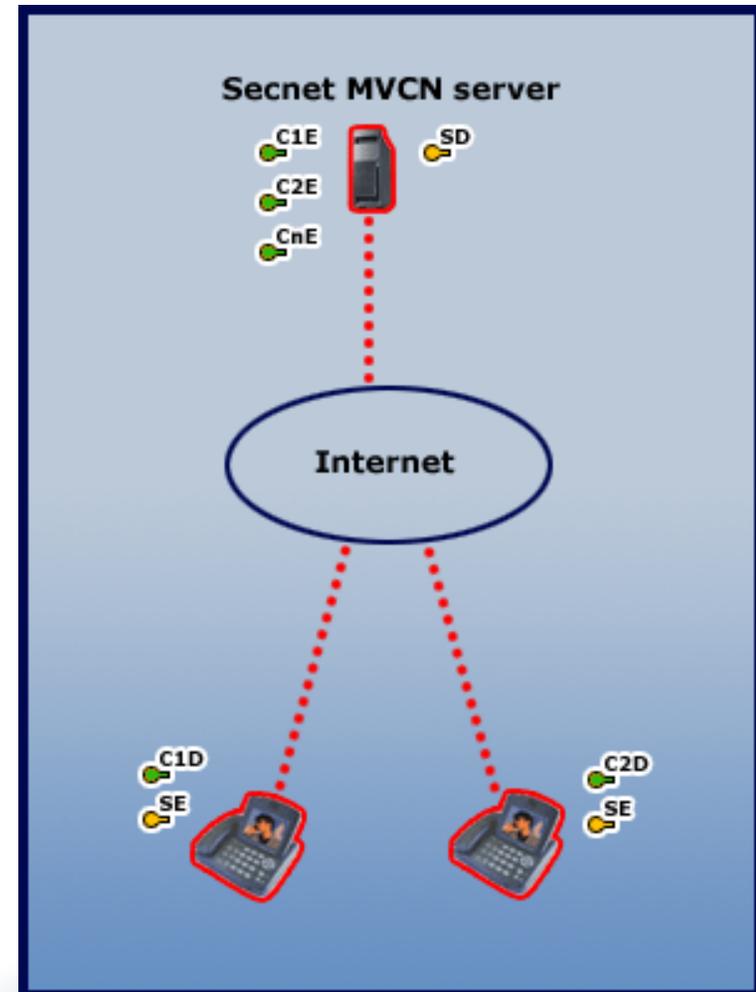
- Protected endpoints
- Protected network management
- Protected connection establishment
- Protected communication between endpoints
- Encrypted internal communication
- Protected against third party units
- Self-protecting mechanism

SECURITY

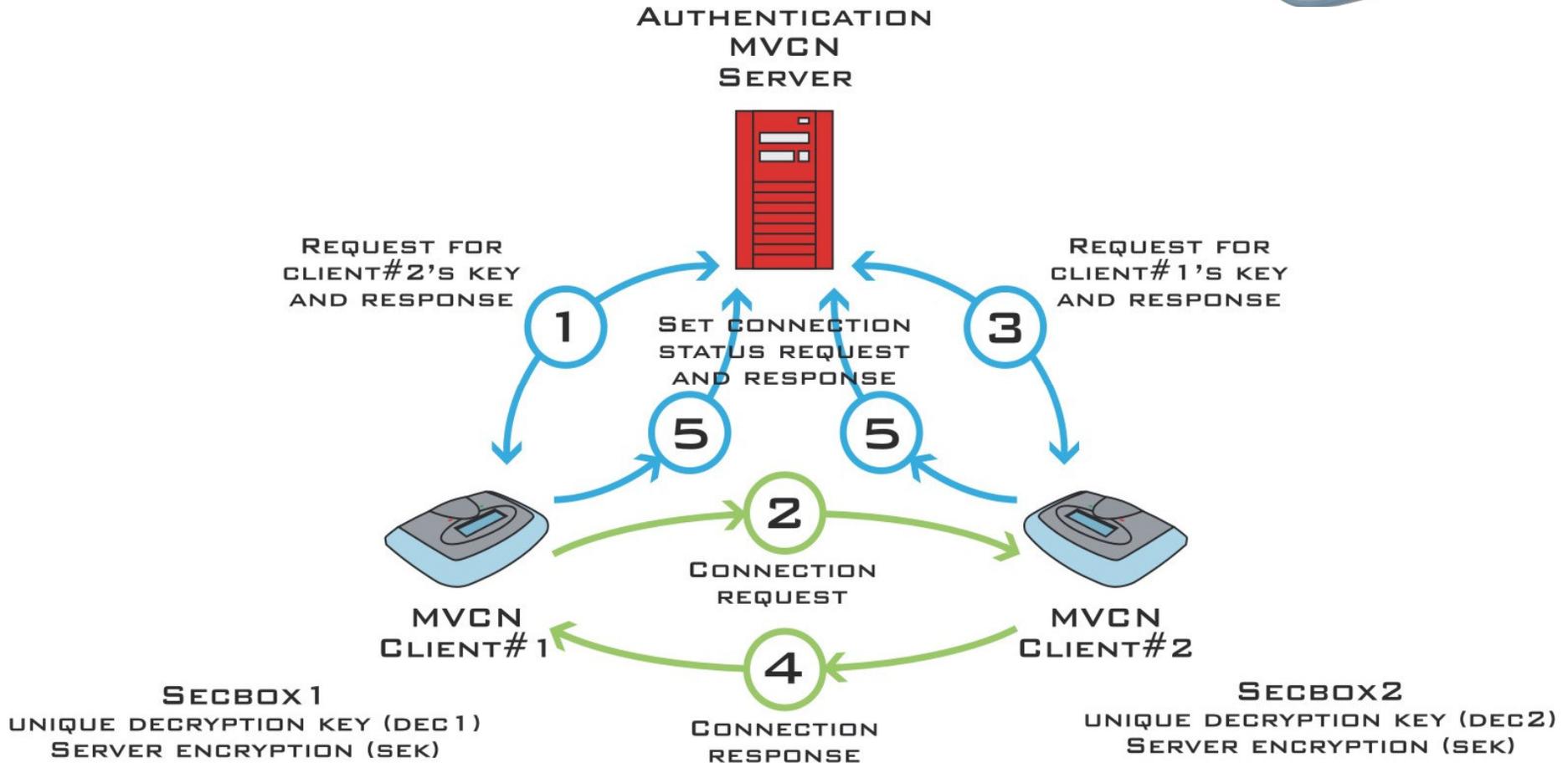
RSA keys in MVCN



- Asymmetric **RSA key pair** generated for each secbox
- MVCN server stores all Encryption keys of the appliances are in the server, decryption keys are built into the appliances
- Encryption key of the server is built into the appliances



MVCN connection

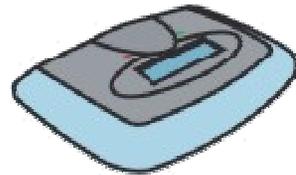


Initial "handshake" process

1st communication step



2048 BIT SERVER
ENCRYPTION KEY (SEK)



SECBOX 2

INQUIRY INFO

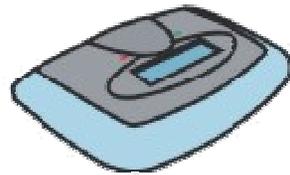
1

SECURITY

2nd communication step



1024 BIT SECBOX 1
ENCRYPTION KEY (ENC1)



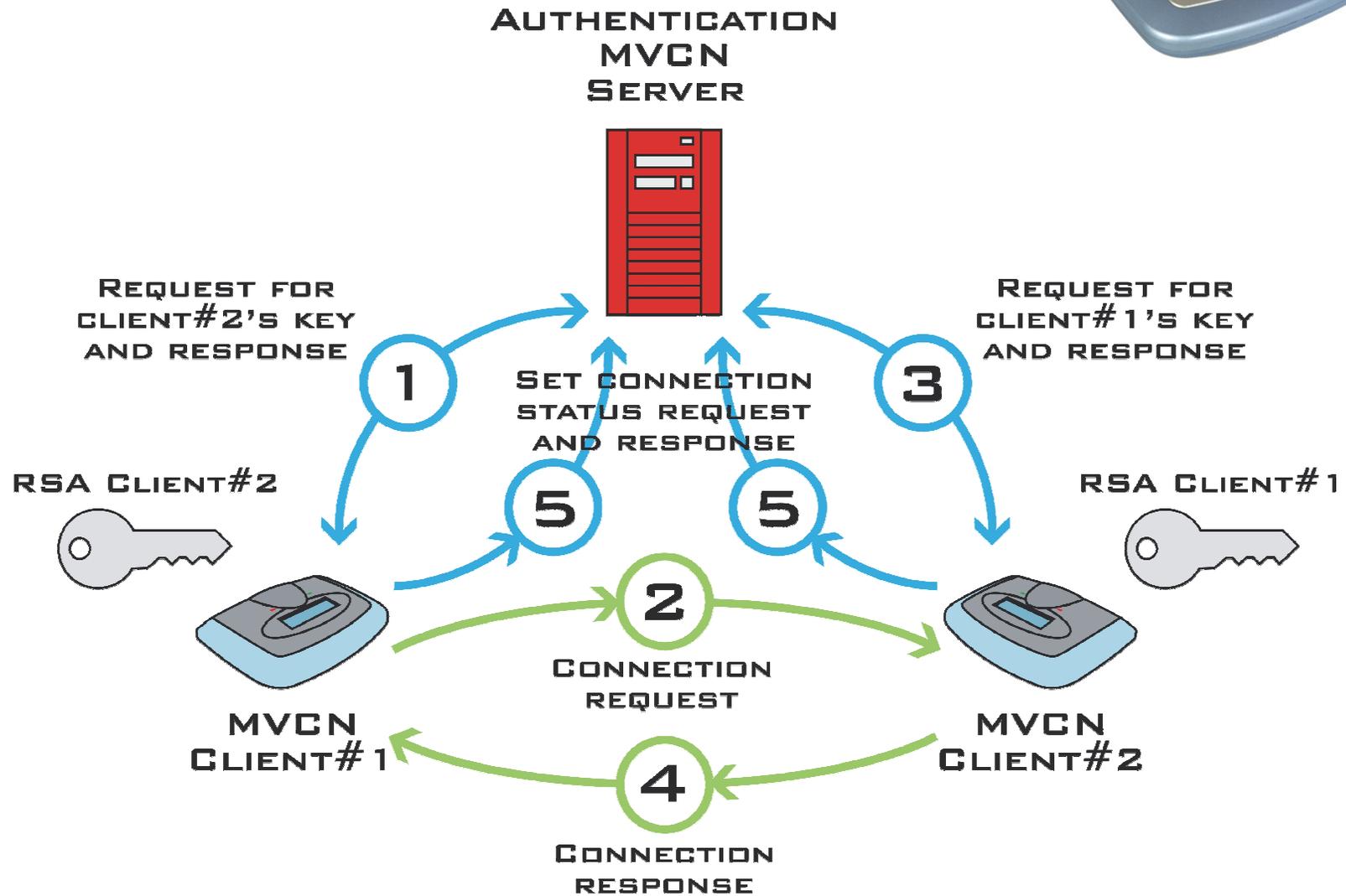
SECBOX 2

IP ADDRESS
+ PORT
ENCRYPTION KEY
OF SECBOX2
(ENC2)



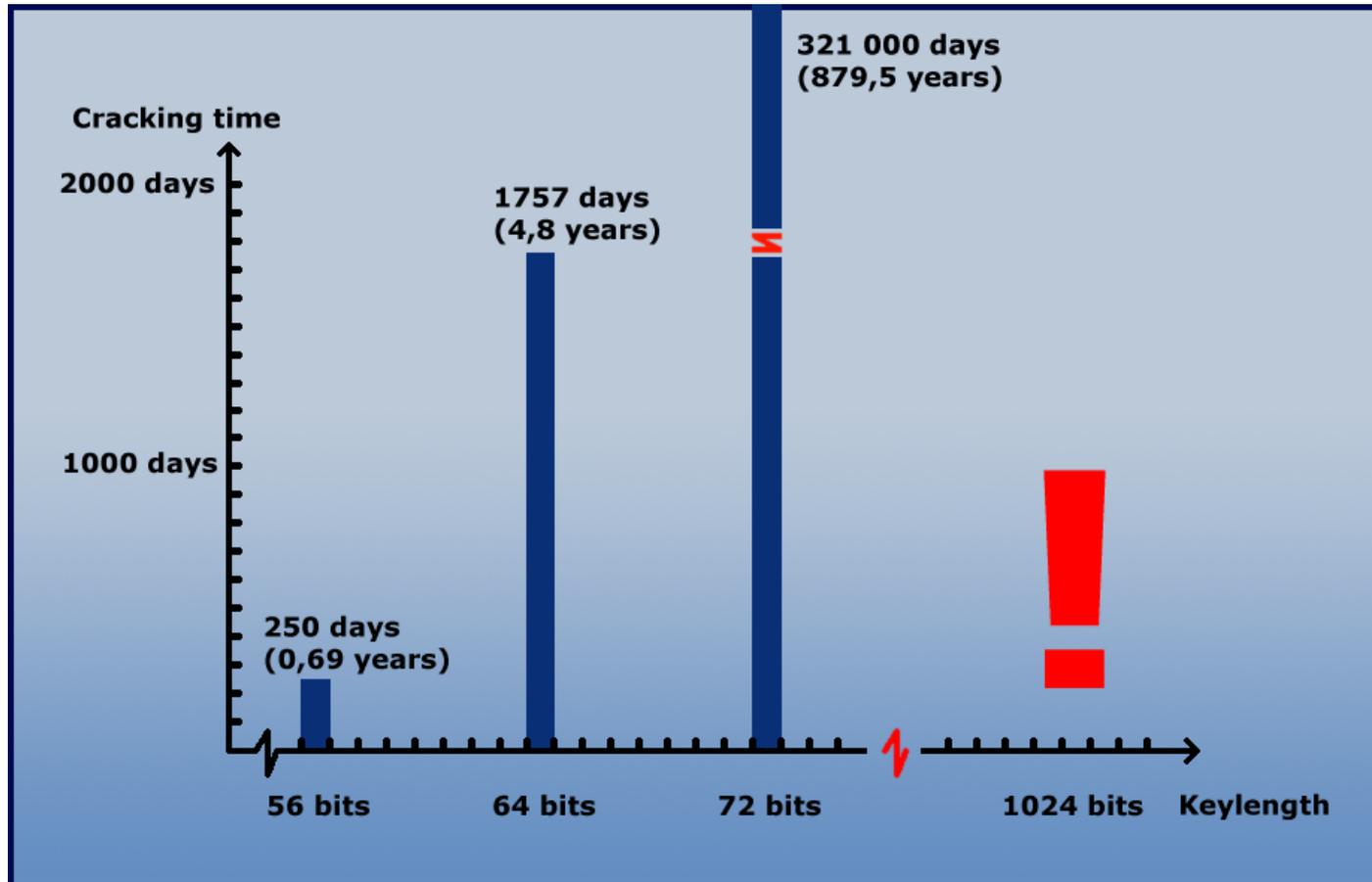
SECURITY

MVCN connection



2048 bits RSA + 1024 bits RSA

Cracking RSA keys



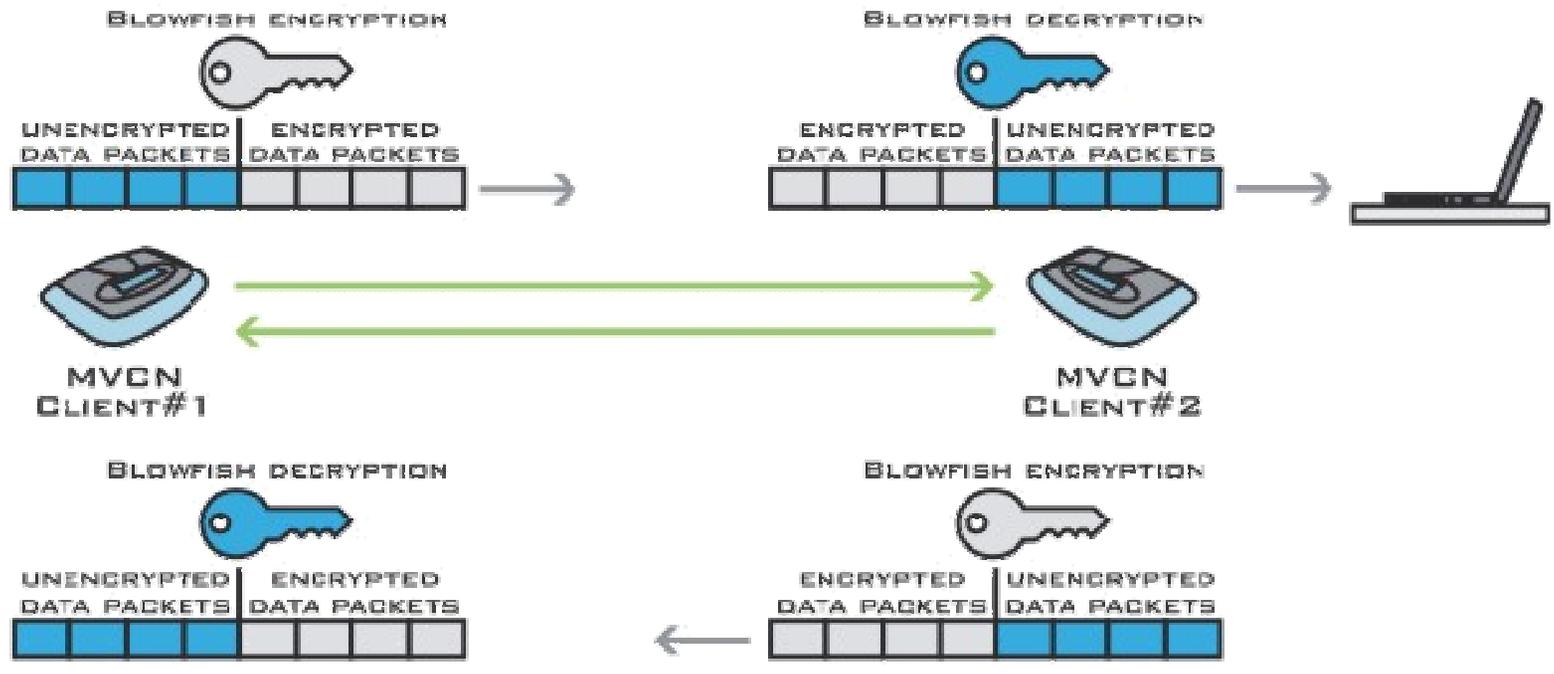
Source: distributed.net

SECURITY

P2P communication

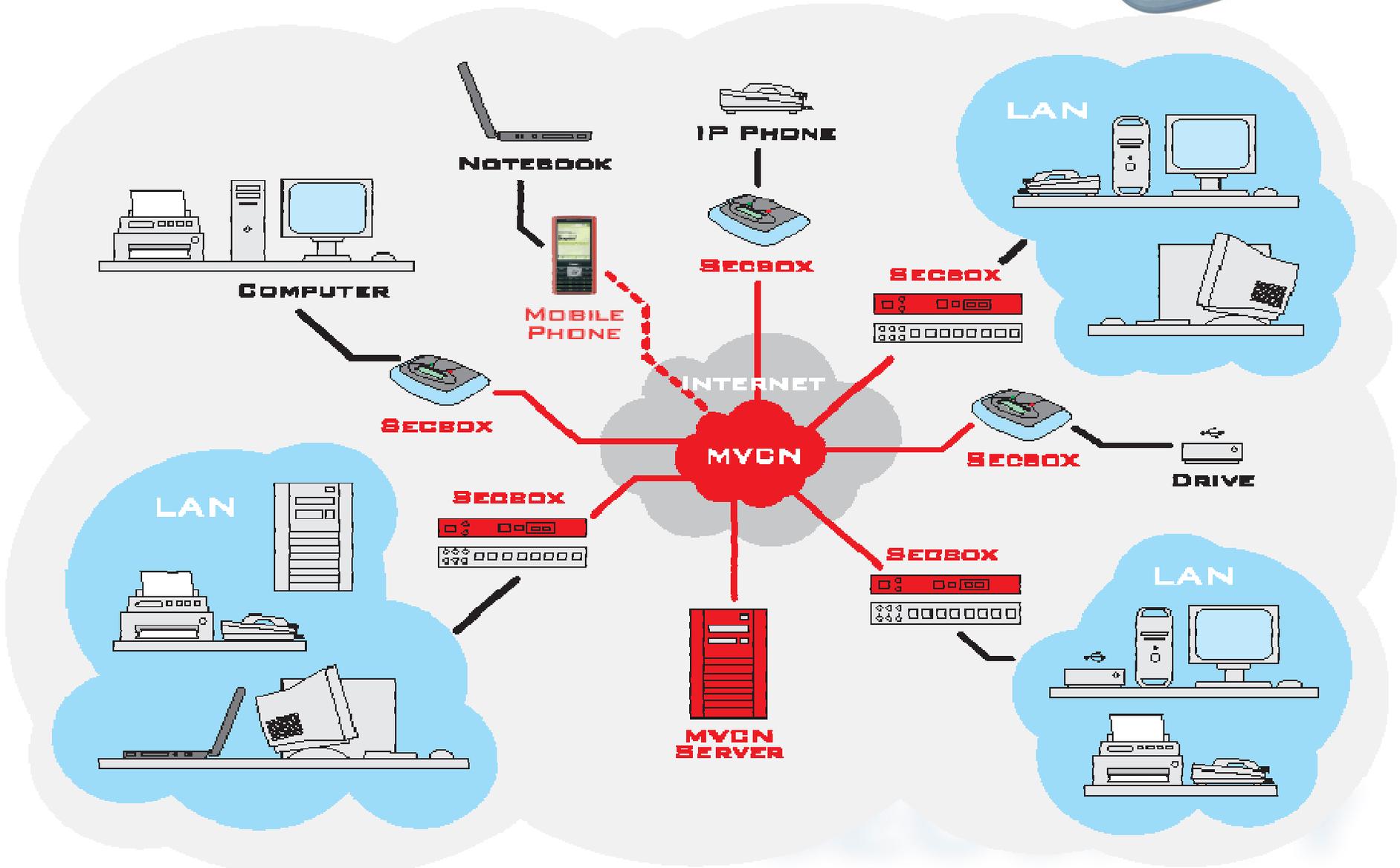


AUTHENTICATION
MVCN
SERVER



448 bits blowfish + CRC

MVCN network



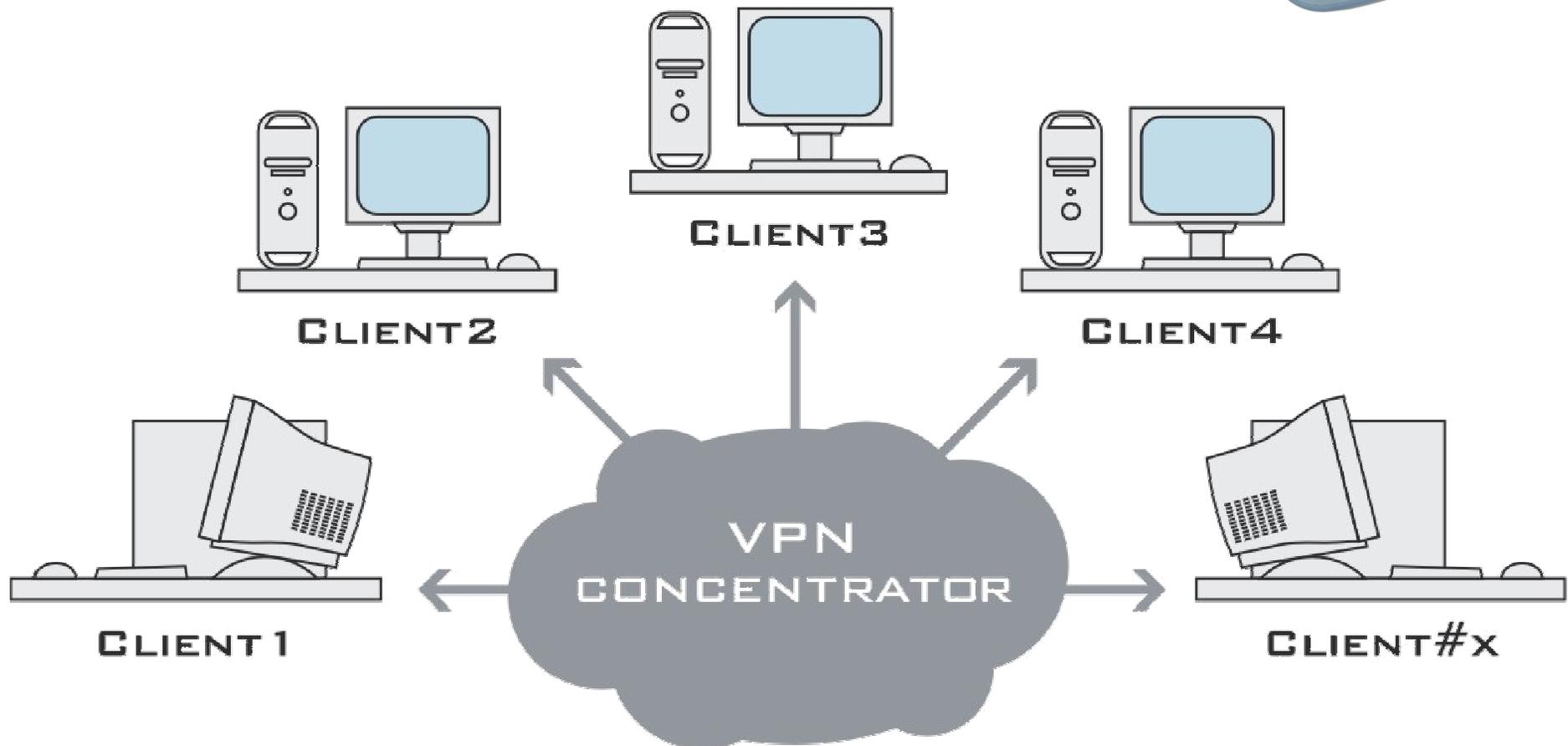
Why better than a VPN?



- More bandwidth efficient (matrix topology vs star topology)
- No central point of attack
- No unencrypted packet ever transmitted
- key length 2048 bits RSA server side (max 4096 bits)
- key length 1024 bits RSA peer to peer (max 2048)
- key length 448 bits Blowfish – CBC data transfer

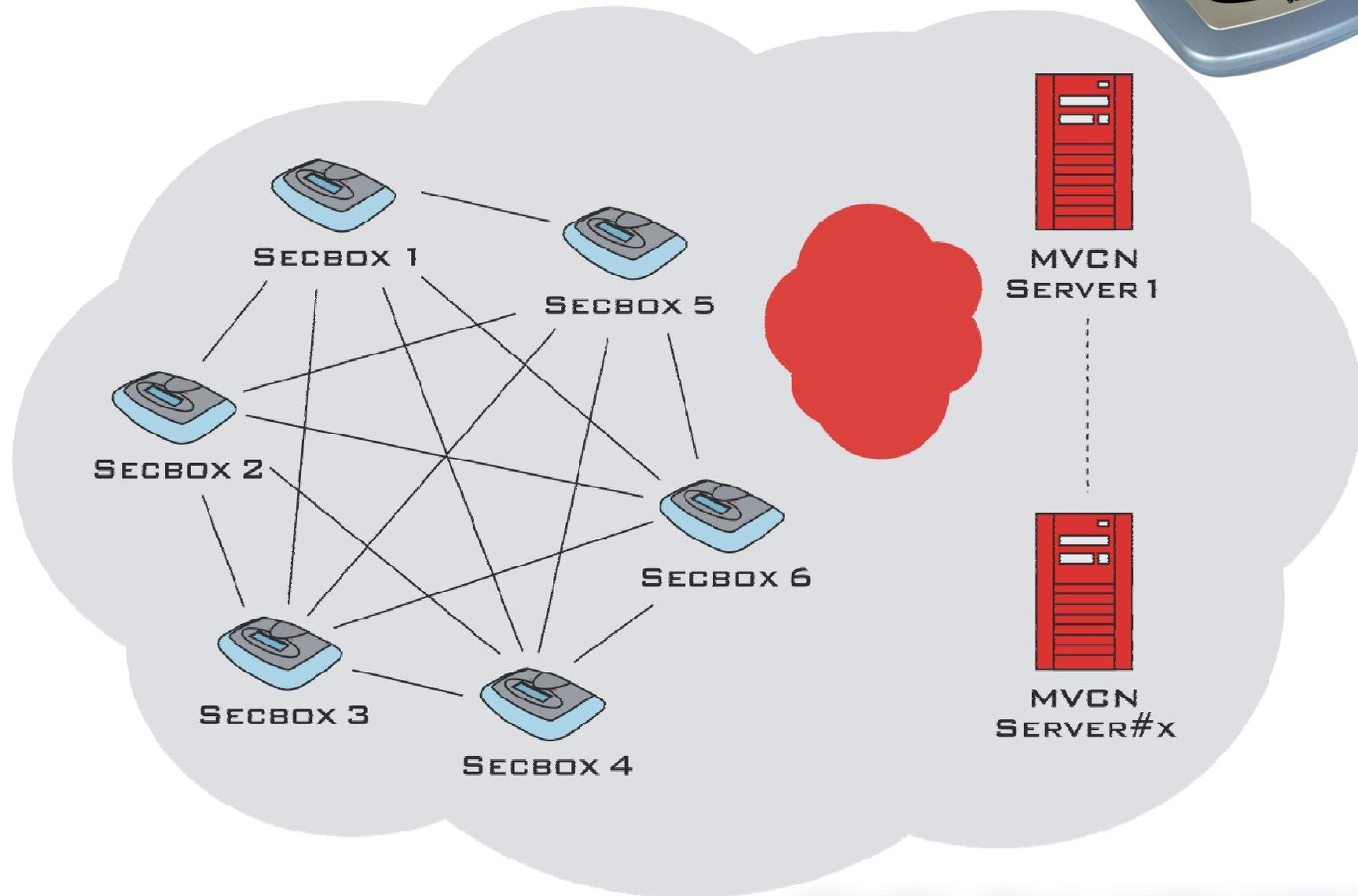
SECURITY

Classic VPN topology



Has single point of failure

MVCN matrix topology



Matrix topology is superior

Why better than VPN



- very easy web-based configuration
- no tech knowledge on user side
- centrally manageable
- biometric identification possible
- full network can be on same class A, B, or C network range
- Full remote management
- REAL plug and play device

SECURITY

VPN vs. MVCN



Feature	VPN	MVCN
Secure connection establishment	☒	☺
Protection of endpoints	☒	☺
System level protection	☒	☺
Only encrypted information in the system	☒	☺
Dynamic relocation of endpoints possible	☹	☺
Low building up cost	☹	☺
Low operating cost	☺	☺
Low expansion cost	☹	☺
Secure data flow (communication)	☺	☺