VoIP Gateway Series

Unwanted Call Blocking Service Features
(Hacking Call, Illegal Call, etc)

AddPac Technology

2011, Sales and Marketing

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- Overview

- Unwanted Call Blocking Service for VoIP Gateway, IP-PBX

  - Blocking of Call Generated from unregistered IP address

  - Unregistered Calling Number's PSTN Routing Blocking

  - PSTN Routing Blocking by using Called Number digit pattern.

- DDoS Attack Blocking

- ACL(access-list) Function

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Overview

- AddPac VoIP Gateway/IP-PBX anti-hacking function, blocking of illegal call, DDoS attack blocking, etc

    — Blocking of call generated from unregistered IP address
    — Unregistered Calling Number's PSTN Routing Blocking
    — Unwanted PSTN Routing Call Blocking by using called number digit pattern.
    — DDoS attack blocking by ethernet packet analysis when DDoS attack is occurred.
      This ensures service continuity by blocking related IP for a certain time after continuous DDoS attack and pattern analysis when sending data.
    — Blocking of unwanted packet by setting ACL (access-list)
       Standard & Extended IP Access List

Unwanted Call Blocking Service

- **Blocking of call generated from unregistered IP address in VoIP gateway**
  - This function does not response when call is incoming, except pre-registered H.323 GateKeeper, SIP server, Head and Branch office IP address.
  - When illegal hacking server try to port scanning, this function prevent VoIP gateway from hacking server by no response SIP or H.323 message, and blocking incoming call from unwanted outside VoIP gateway.
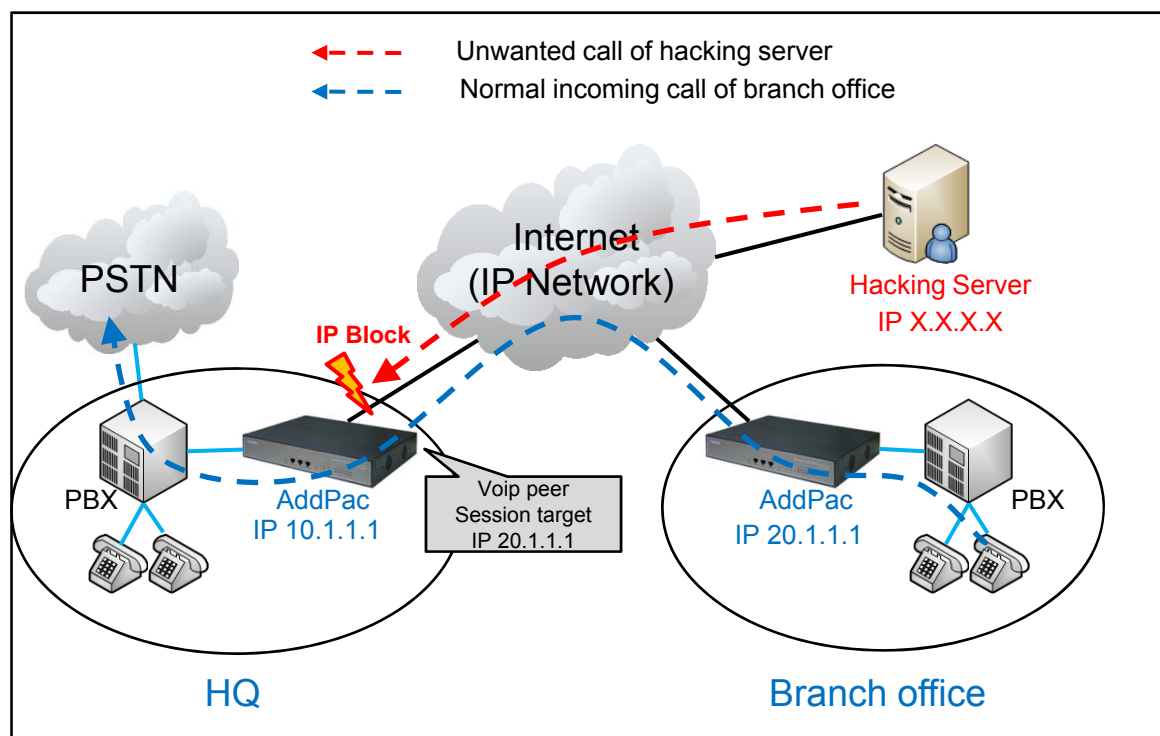
When unregistered IP address blocking scheme is enabled, following operation is occurred.

- Blocking incoming call by discarding H.323 and SIP message except branch office IP registered in HQ VoIP Gateway

- Registered GK and SIP proxy server IP address in VoIP gateway is processed as normal call even if it is not registered IP in Branch office.

- Server address registered by DNS is automatically processed as normal call.

Unwanted call of hacking server
Normal incoming call of branch office

PSTN
Internet (IP Network)
Hacking Server IP X.X.X.X
IP Block
PBX
AddPac IP 10.1.1.1
Voip peer Session target IP 20.1.1.1
AddPac IP 20.1.1.1
PBX
HQ
Branch office

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Unwanted Call Blocking Service

- **Unregistered calling number's PSTN routing call blocking**
  - This function block the incoming call except E.164 registered in VoIP gateway.
    (Block PSTN routing call by ignoring configuration of destination-pattern T)
  - Regardless of E.164 address , incoming call from GK or SIP proxy server is considered normal call.
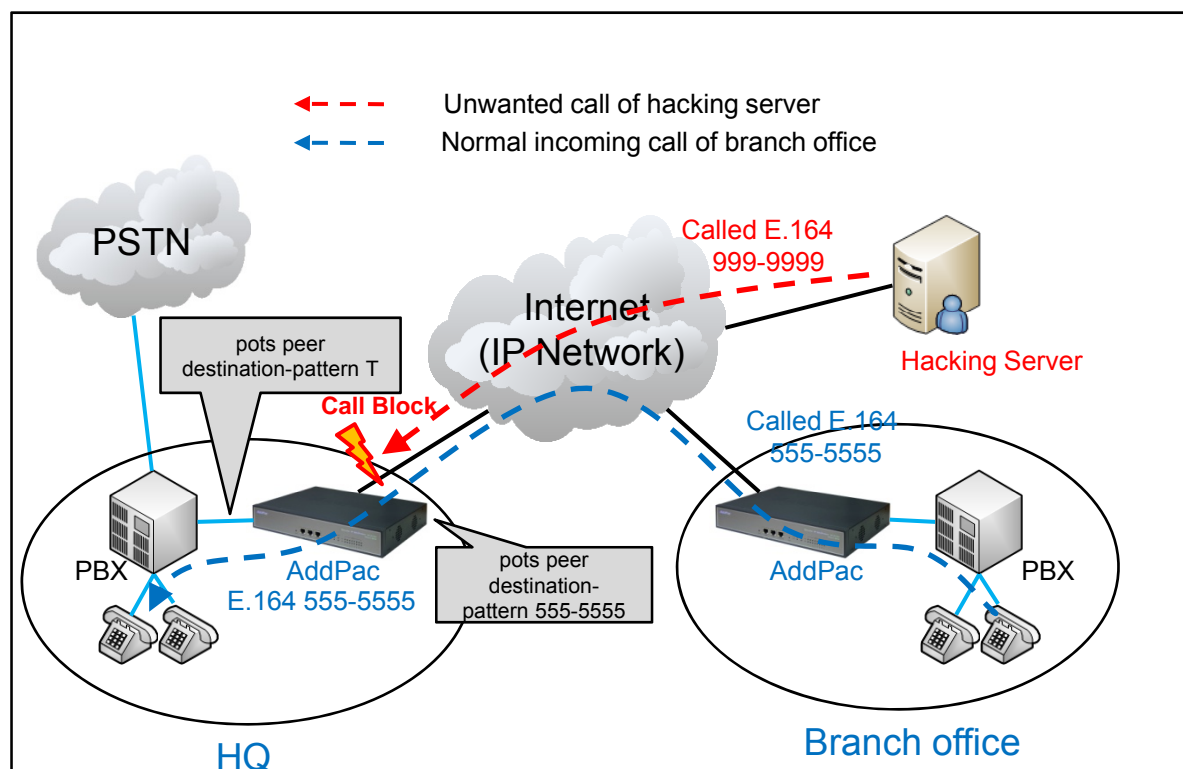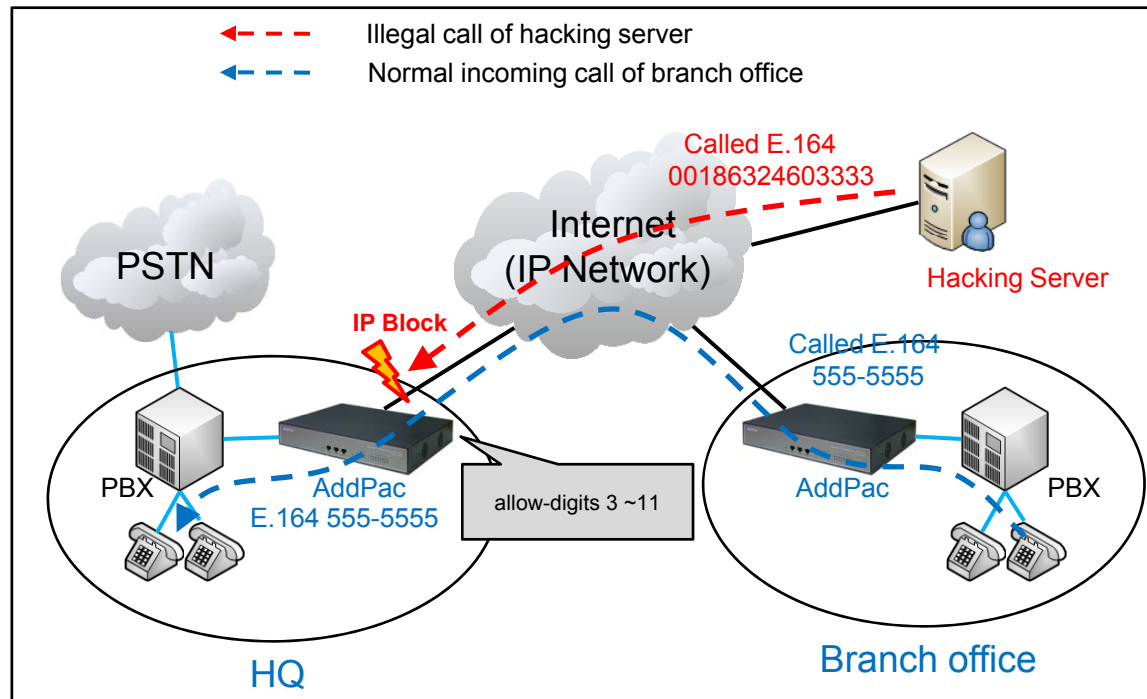

Block of unwanted call by configuring PSTN back-up

- When PSTN line is connected for back-up line in VoIP network design, unwanted hacking call via PSTN line can be occurred.

- Only permit incoming call from phone number registered PBX'S port connected to VoIP gateway.

Unwanted Call Blocking Service

- **Unwanted PSTN Routing Call Blocking by using called number digit pattern**
  - This function block the call by using E.164 called number digit pattern.
  - For example, international call or long distance call use the E.164 prefix number for numbering plan.
  - By using call routing pattern-match, international or long distance outbound call from VoIP gateway via hacking can be blocked or controlled.

- - - → Illegal call of hacking server
- - - → Normal incoming call of branch office

Called E.164
001863246033333

Internet
(IP Network)

Hacking Server

PSTN

IP Block

Called E.164
555-5555

PBX   AddPac   AddPac   PBX
          E.164 555-5555
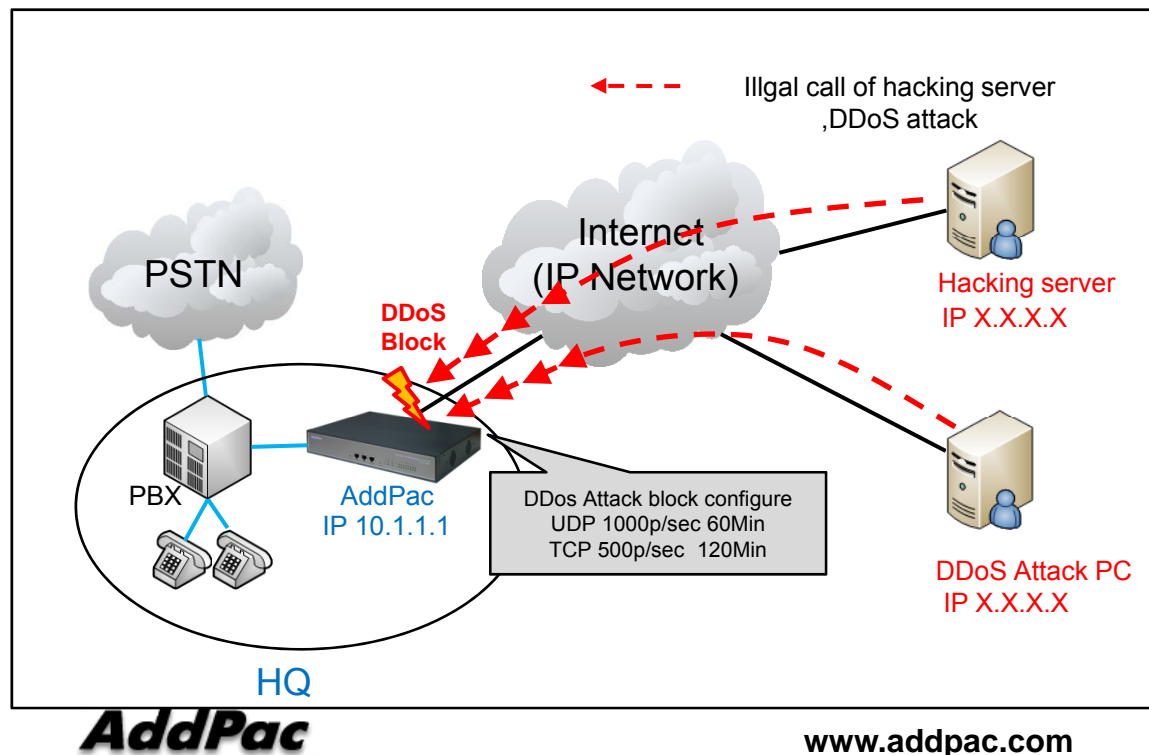
allow-digits 3 ~11

HQ   Branch office

Incoming call blocking by using incoming call E.164 address digit-pattern

- Permit VoIP gateway's incoming call E.164 digit number only from 3 digits to 11digits, and if digit number is under 2 digits or upper 12 digits, this call is blocked.

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VoIP gateway DDoS Attack Blocking

- ## DDoS attack blocking function

  - If traffic level coming from a unspecific IP address is over threshold, ethernet packet from this IP address is all blocked.

  - Providing function of browsing/deleting blocked IP address index in supervisor admin mode.

  - Seamless service is possible because this function provides the automatic IP address unblock service in DDoS attack IP address black list after certain time is pass

Illgal call of hacking server
,DDoS attack

Internet
(IP Network)

PSTN

DDoS
Block

Hacking server
IP X.X.X.X

PBX

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IP 10.1.1.1

DDos Attack block configure
UDP 1000p/sec 60Min
TCP 500p/sec 120Min

DDoS Attack PC
IP X.X.X.X

HQ

Detection of DDoS of unspecific IP
- Monitoring number of packet per time by setting threshold of network protocol(TCP, UDP, ICMP etc.)
- Blocking packet about related IP address when threshold is exceeded.
- This service is only applicable in DDoS attack outside network interface like as internet

Administrating of index of DDoS block
- Configuring each protocol. (configuration of administer)
- Providing automatic IP address unblock service after some time duration by setting block time about blocked IP address list.
- Decreasing device overload using real time DDoS attack monitoring, This help to increase the VoIP gateway performance

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ACL (access-list) Function

- ## Unwanted call blocking using Access List
  - Preventing VoIP gateway from hacking attack via ethenet packet block/unblock by ACL function.
  - Providing effective call block function by black list in case of specific pattern or consistent IP attack, or by white list in case of complicate packet pattern and unspecific attack.
  - Providing two method s of ALC like Standard Access, Extended Access
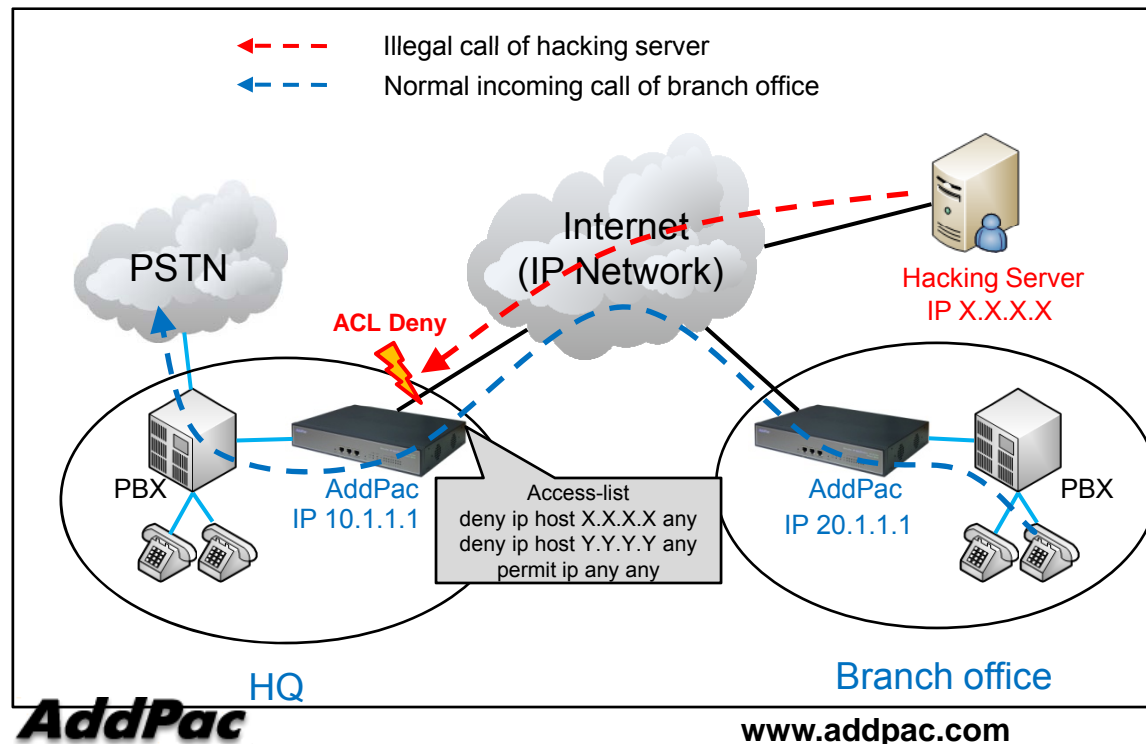
Effective call block service using standard, extended ACL

- Standard ACL searches only source IP address, and then block it if source IP address is unregistered.

- Extended ACL searches registered Source, Destination IP and then block it if unregistered.

Thank you!

AddPac Technology Co., Ltd.
Sales and Marketing

Phone +82.2.568.3848 (KOREA)
FAX +82.2.568.3847 (KOREA)
E-mail sales@addpac.com

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