RealSentry™ SSL overview

AXILIANCE
Internet Security Appliance

Advanced Protection for Web Services

- ✓ SSL Accelerator
- ✓ Intrusion Detection System
- ✓ Reverse Proxy
- ✓ Application-Firewall

Web services deployment

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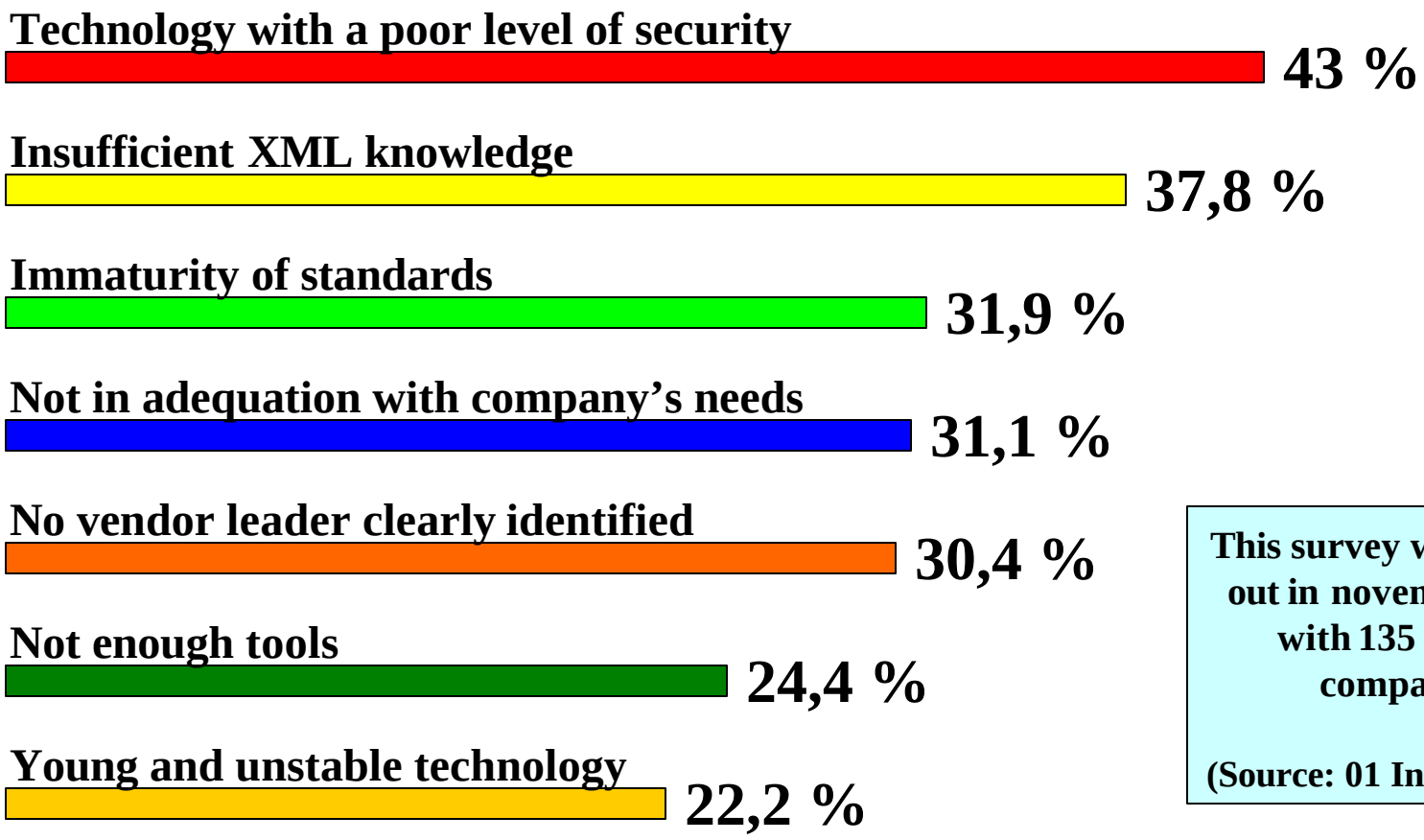
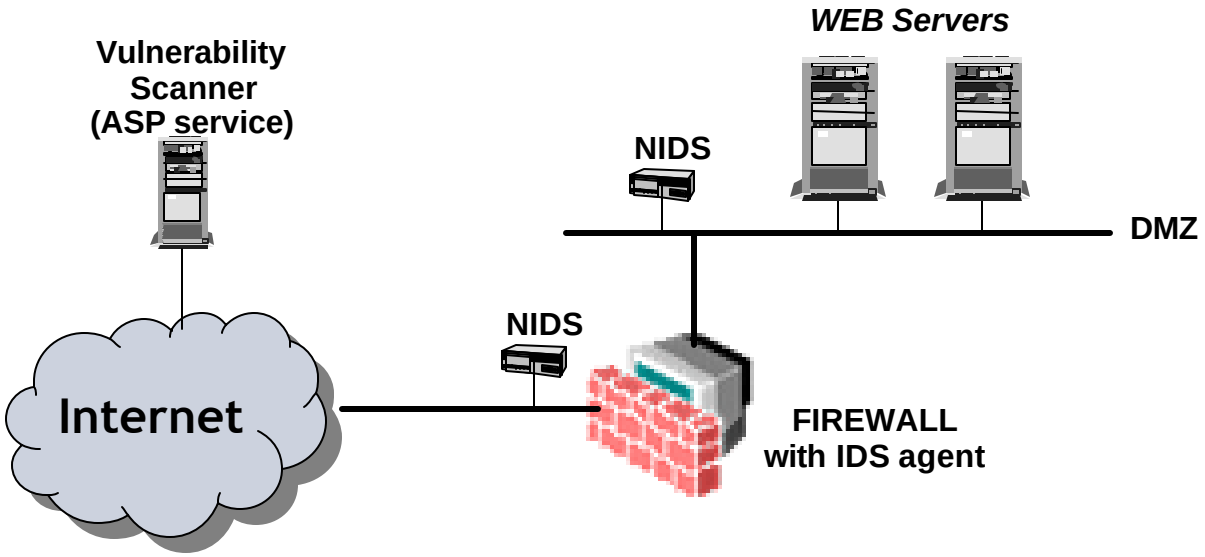
The principal reasons which delay the deployment of web technologies



This survey was carried out in november 2001 with 135 french companies

(Source: 01 Informatique)

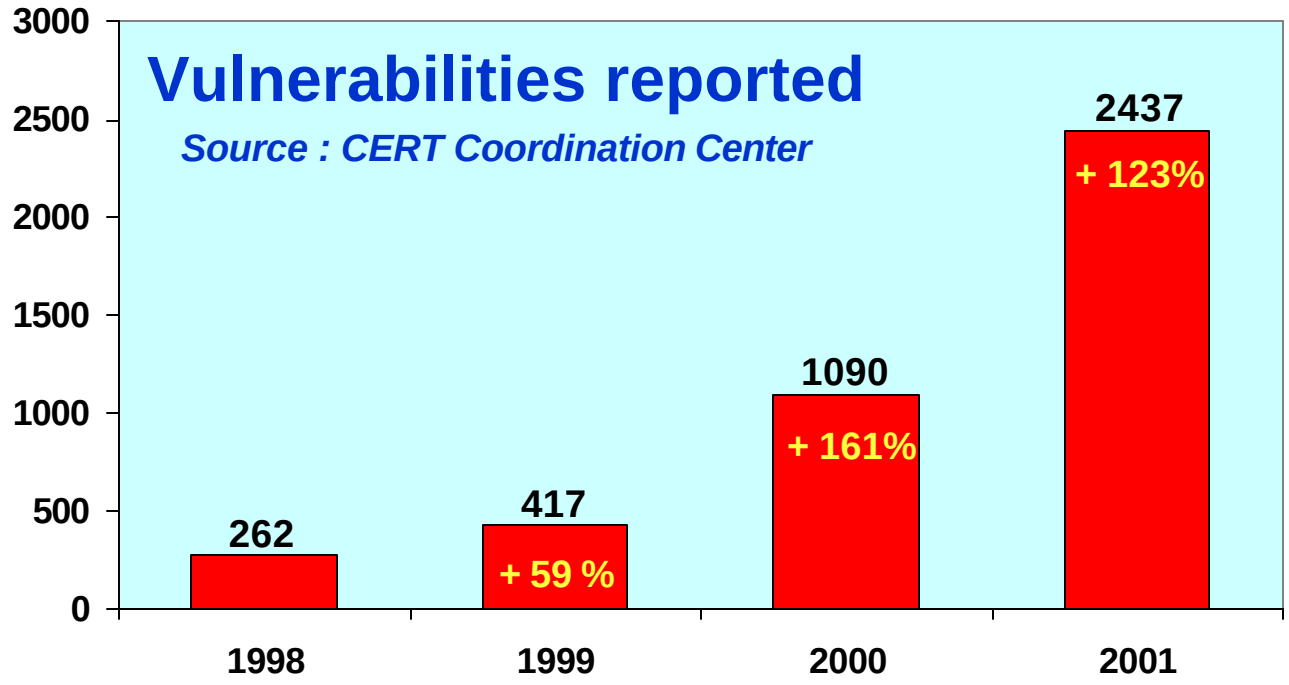
How to protect Web Servers today ?



Today, the best solution uses three components :

- Firewall : To forward only HTTP(S) packets to Web servers
- Network-based Intrusion Detection System (NIDS) : To prevent from malicious packets
- Vulnerability scanner : To detect known vulnerabilities on systems

Vulnerabilities : A worrying progression



Code Red : 2,6 billion US dollars of damage
Nimda : 590 million US dollars of damage

Why are Firewalls insufficient ?

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- Security Policy based only on type of protocols (not on content)
- Unable to analyse encrypted network traffic like HTTPS
- Unable to process a finer-grained analysis of the application activities
- Usually protects only from external network
- Network device managed by a security administrator (in opposition with a Web server managed by a webmaster)

Why are NIDS insufficient ?

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- Protect only against known vulnerabilities (pattern matching)
- Cannot scan content if network traffic is encrypted
- Difficult to deploy on switched networks
- Cannot handle high-speed networks
- Critical setup : Bad configuration generates many false alarms
- Unable to process a finer-grained analysis of the application activities

A new approach against HTTP attacks

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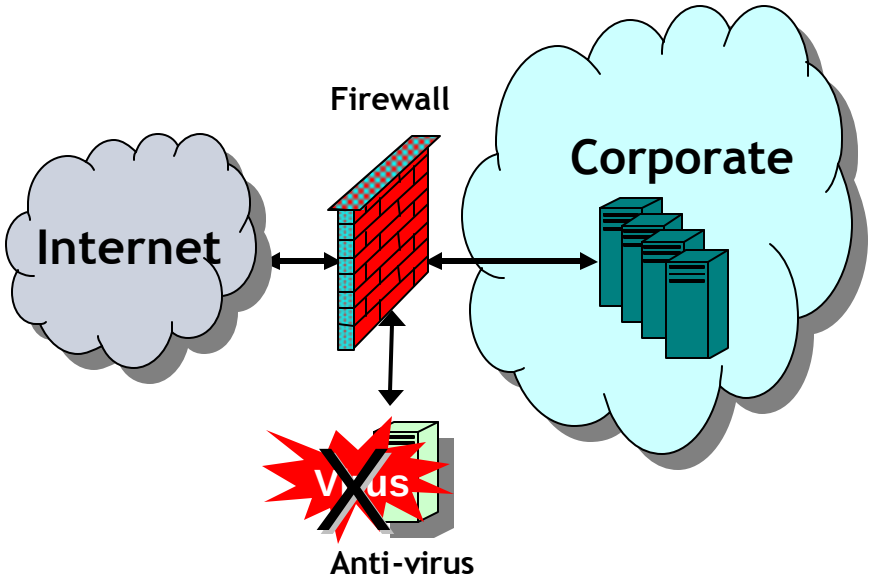
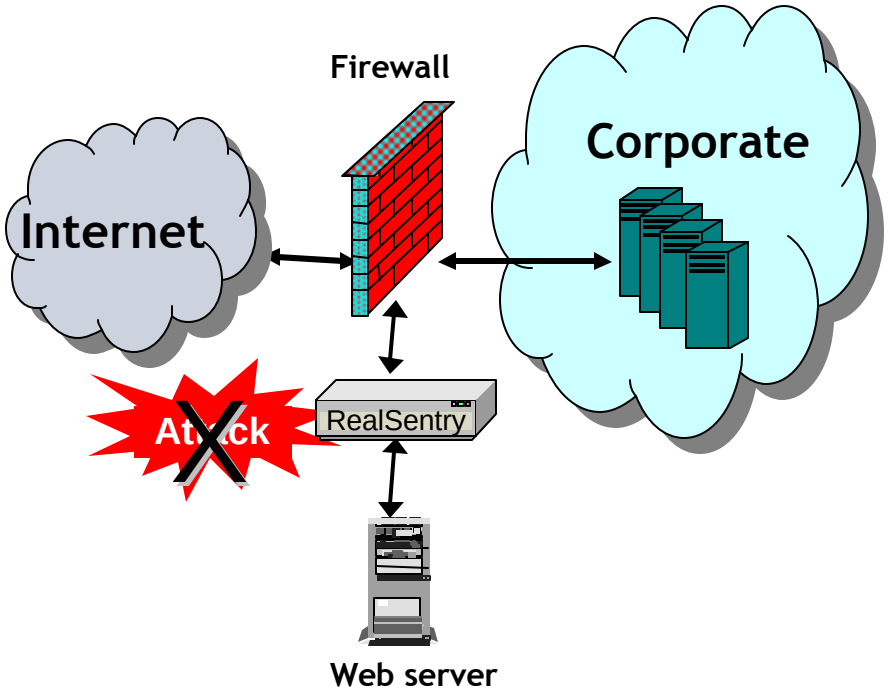
Real-time virus detection



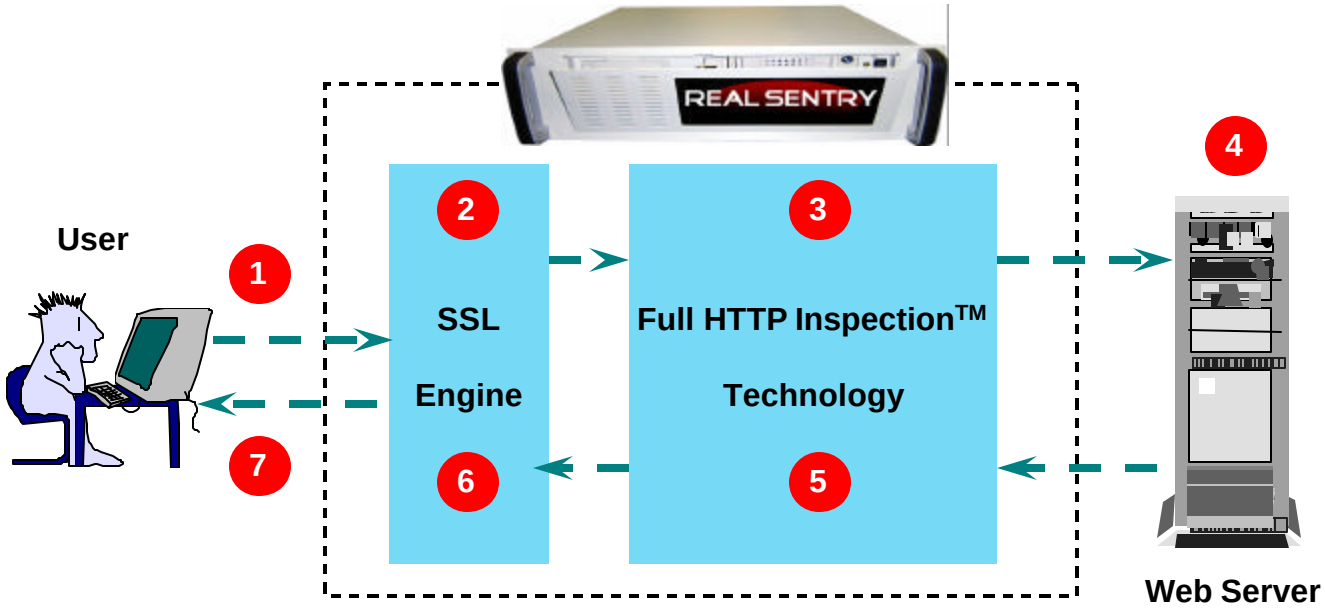
The Antivirus detects and blocks viruses

Real-time HTTP traffic control



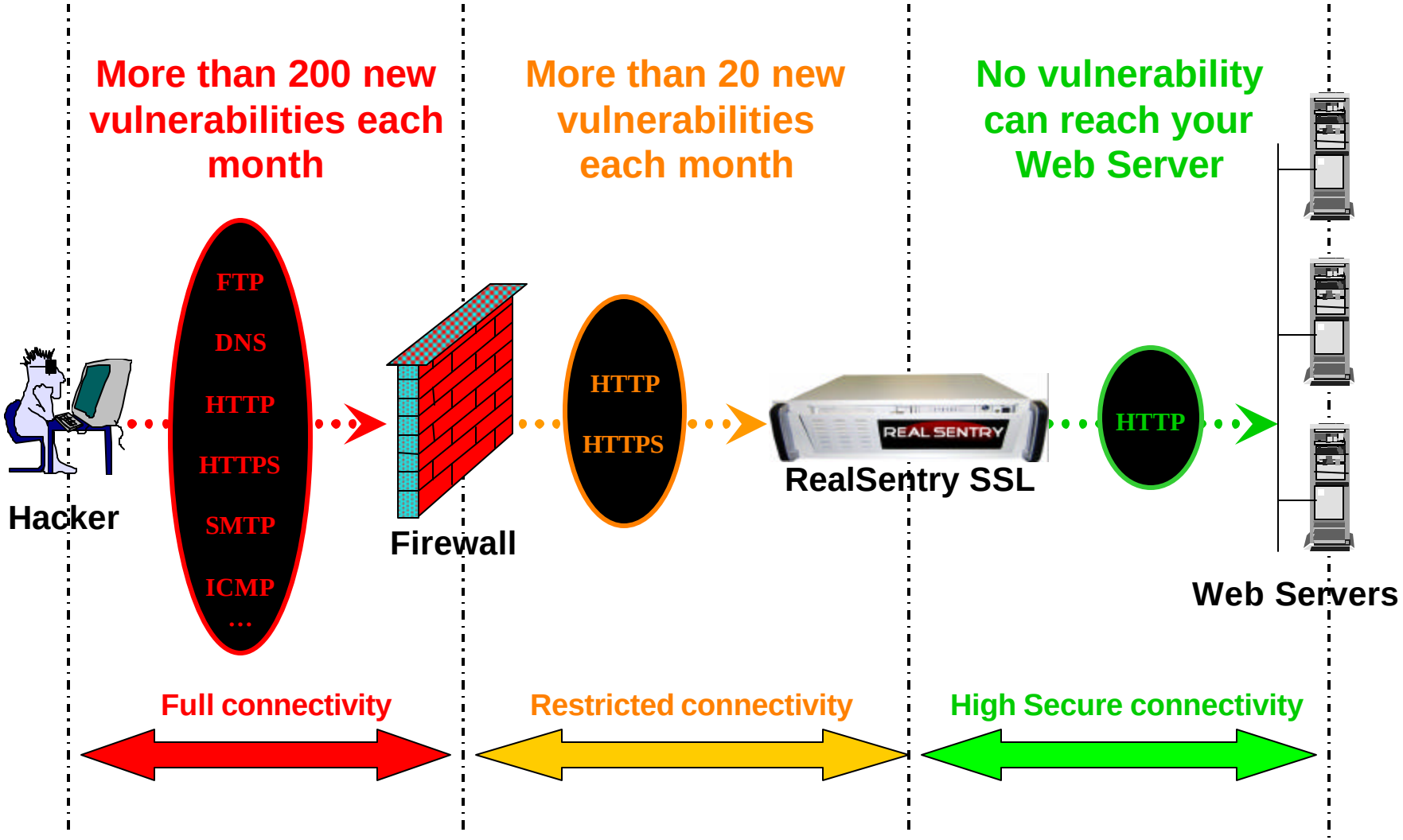
RealSentry detects and protects against known or unknown vulnerabilities

RealSentry concept



(1) HTTP request send by a user
(2) Hardware (RealSentry SSL) or software (RealSentry) decryption
(3) Check HTTP packet with Full Http Inspection^{tm} Technology
(4) If validated by security policy, safe HTTP packet is forwarded to Web Server
(5) Check HTTP packet with Full Http Inspection^{tm} Technology
(6) Hardware (RealSentry SSL) or software (RealSentry) encryption
(7) HTTP answer is sent back to the user

RealSentry provides the ultimate protection



Four technologies in a single box

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Reverse Proxy

Like reverse Proxy :

• RealSentry breaks direct connection between browser and Web server.

But unlike Reverse Proxy :

• RealSentry includes filter capabilty to exclude malicious HTTP packets.

• RealSentry keeps original IP address when operates in stealth mode.

NIDS

Like IDS Probe :

• RealSentry is a network-based protection and runs in stealth mode.

But unlike IDS Probe :

• RealSentry protects against unknown vulnerabilities.

• RealSentry protection is effective even on encrypted packets (HTTPS).

Application Firewall

Like Application Firewall :

• RealSentry allows to implement a security Policy to accept or deny packets.

But unlike Application Firewall :

• RealSentry performs a detailed protocol analysis to prevent against malicious HTTP requests.

SSL Accelerator

Like SSL Accelerator :

• RealSentry handles decryption and encryption tasks for SSL transactions.

But unlike SSL Accelerator :

• RealSentry incorporates built-in security mechanism to protect your web site from fraudulent activities.

RealSentry Technology

Black List Detection (IDS technology)

- **Concept**
  - Signature-based method
  - Requires regular updates
  - Protects only against known vulnerabilities

- **RealSentry Implementation**
  - Automatic updates
  - Multiple rules to prevent IDS evasion
  - Very easy to setup : Protect your Web server in a few minutes

- **RealSentry Benefits**
  - Detects more than 600 HTTP vulnerabilities
  - Effective protection including on encrypted traffic (HTTPS)
  - No need to monitor vulnerabilities or patch your Web server
  - Plug and Protect solution

RealSentry Technology

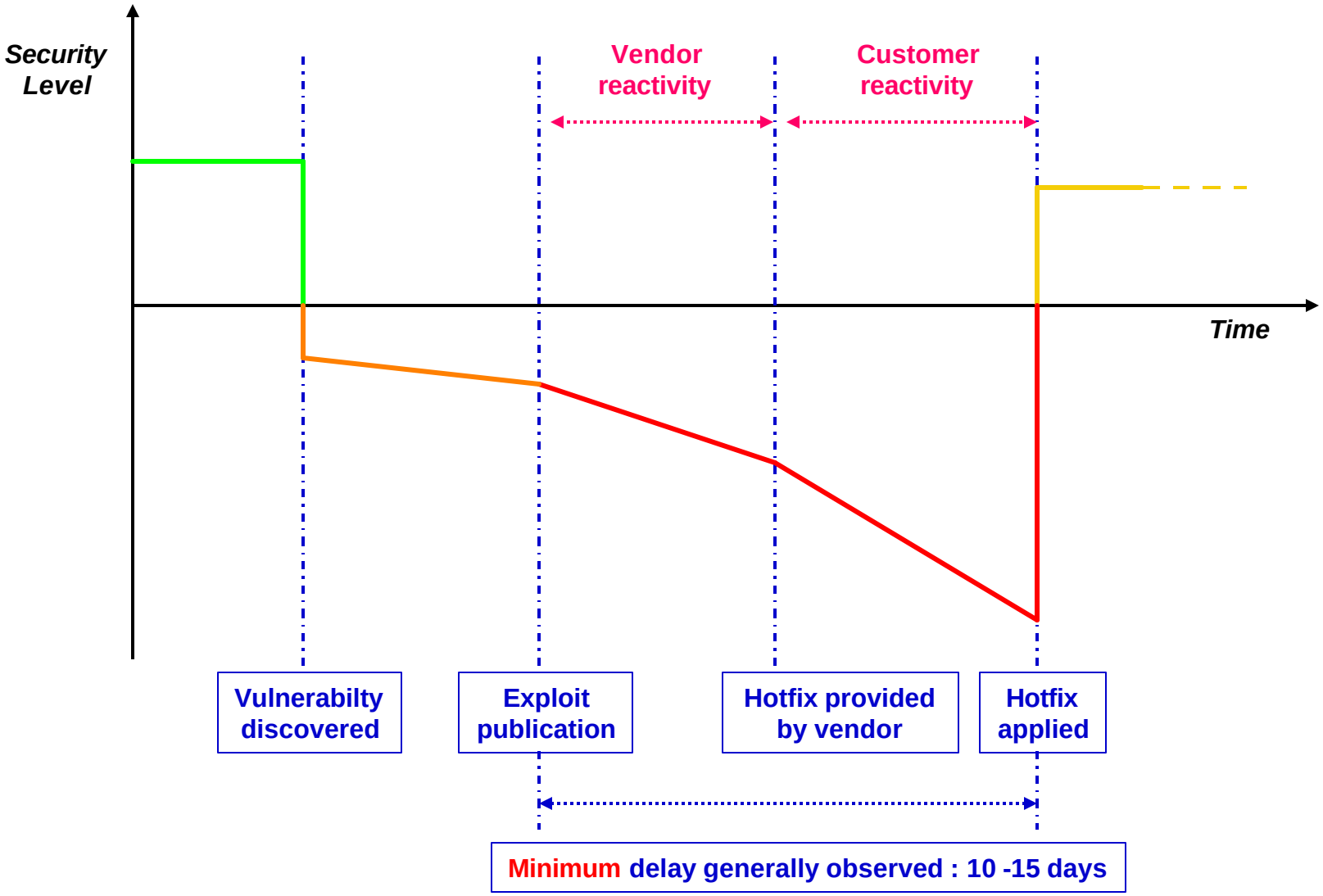
White List Filtering (Exclusive Axiliance technology)

- **Concept**
  - All HTTP requests that are not expressly authorized are prohibited
  - Non signature-based method
  - Protection against known or unknown vulnerabilities

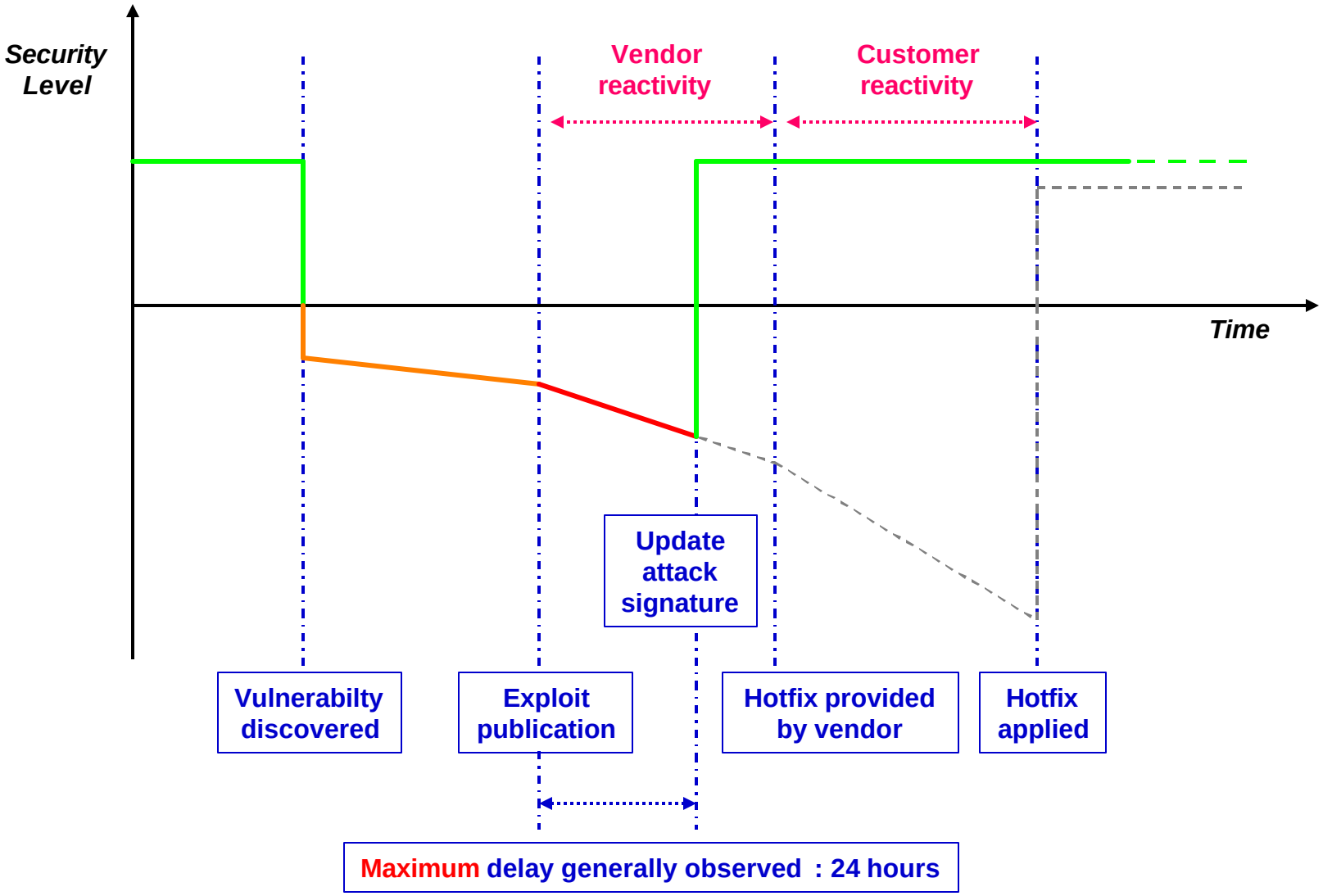
- **RealSentry Implementation**
  - Security Policy define by URL groups, directories or single URL
  - Security Policy includes syntax, URL length, Variables, cookies, …
  - Setup assistants with learning, tracking and protecting modes

- **RealSentry Benefits**
  - Identify and prevent both known and unknown vulnerabilities
  - Effective protection including on encrypted traffic (HTTPS)
  - Represents the most secure solution for Web services currently available in the world

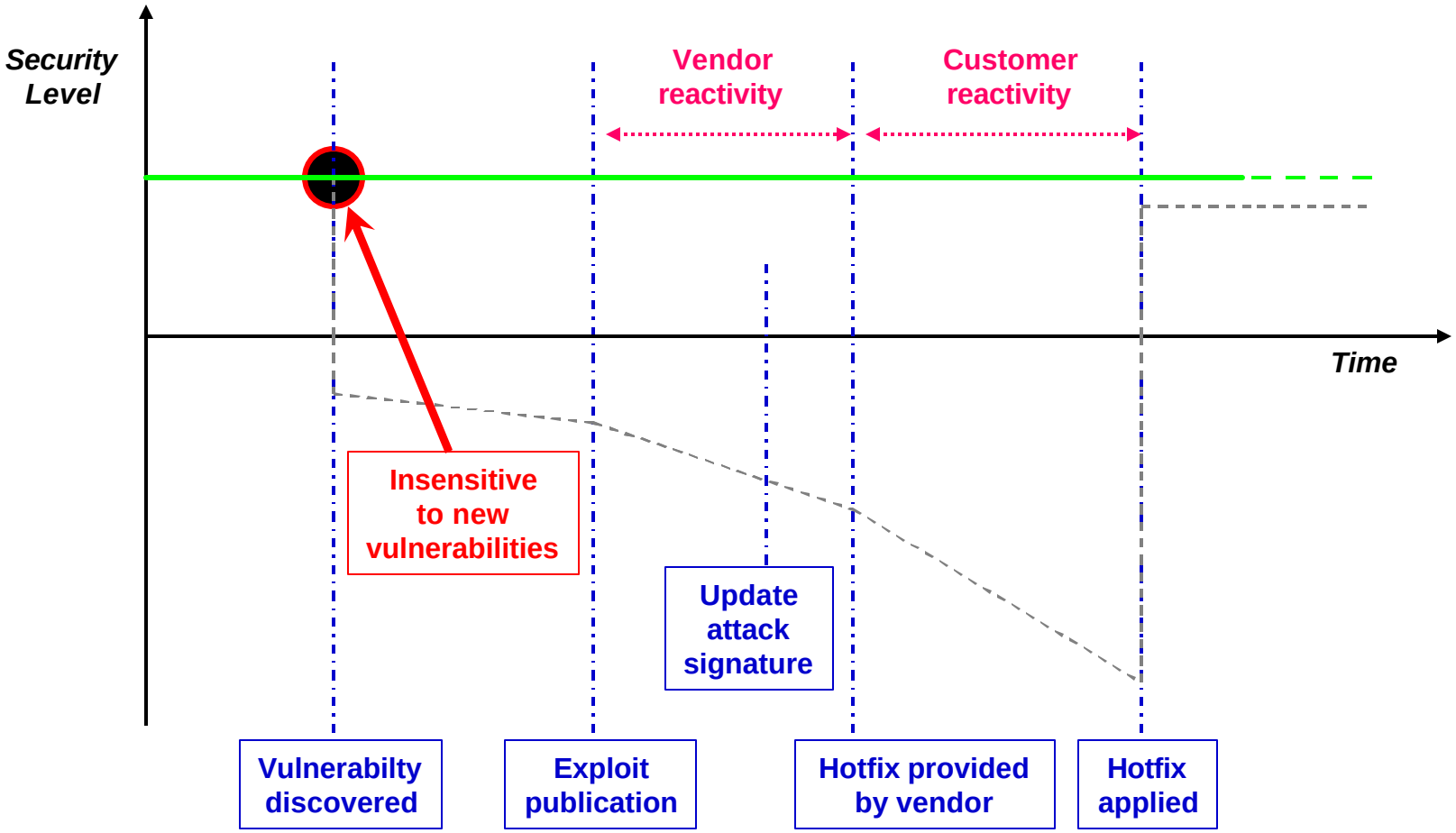
Normal Life Cycle of a vulnerability …



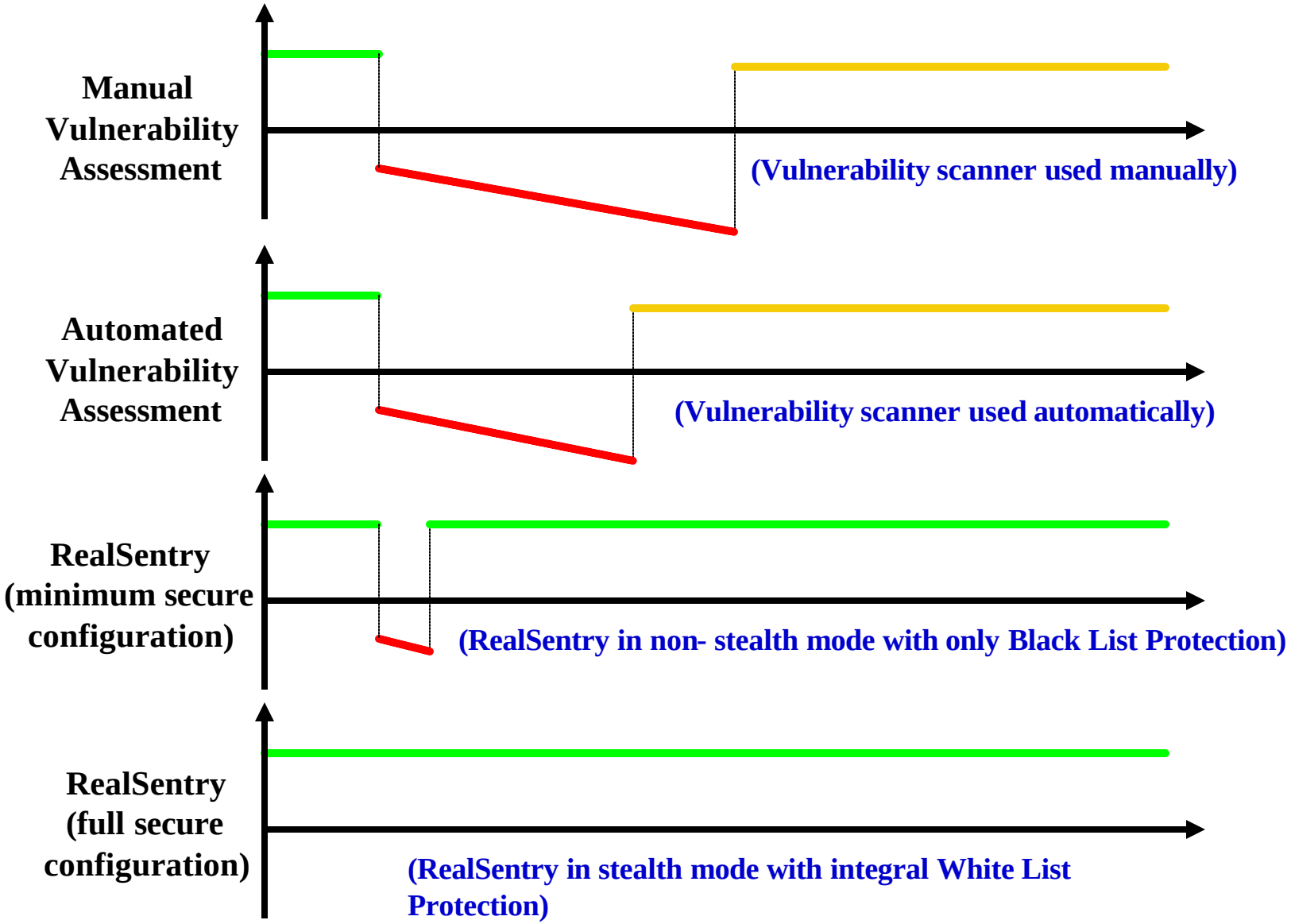
RealSentry with only Black List Protection



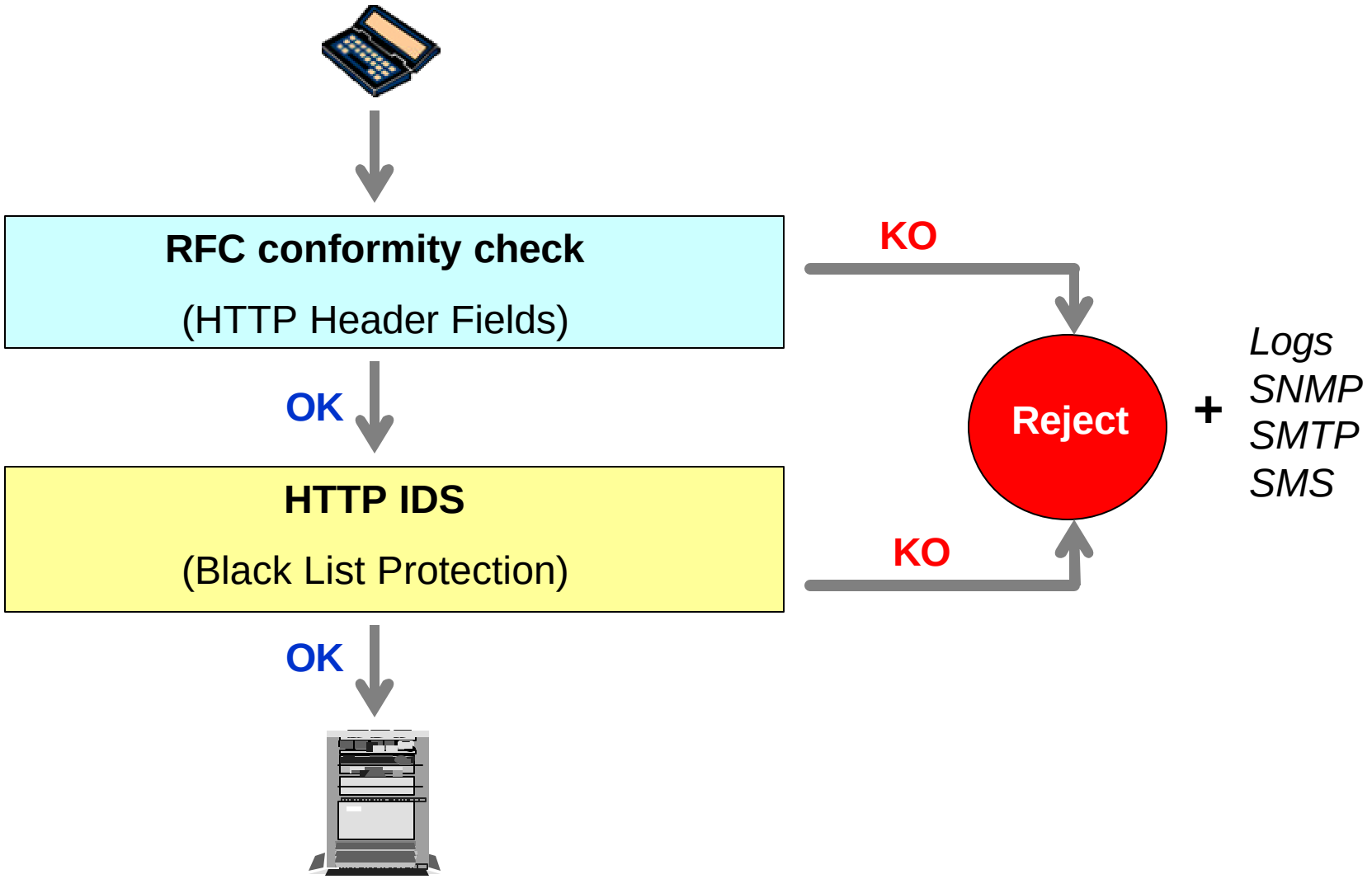
RealSentry with White List Protection



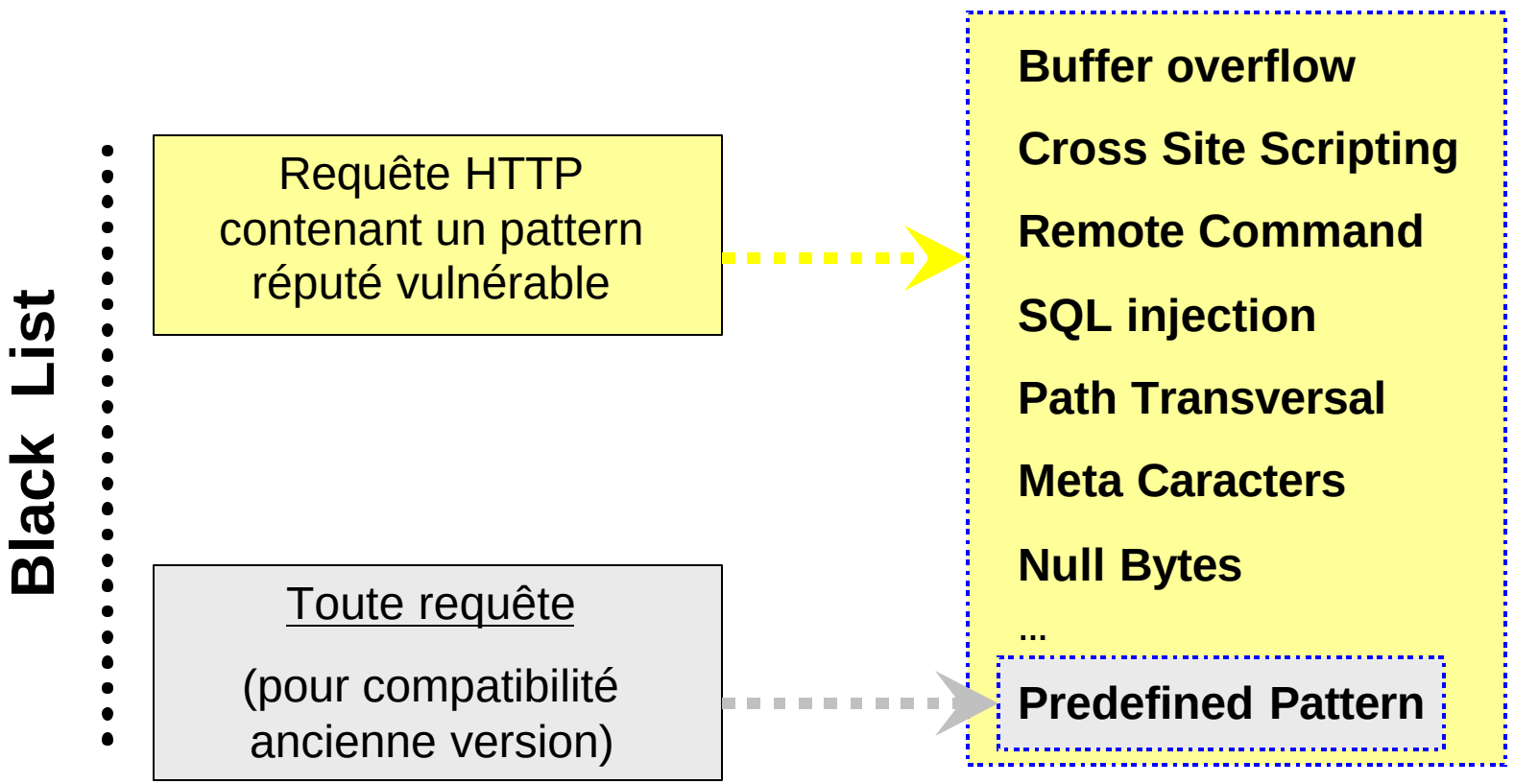
The 4 solutions to prevent vulnerabilities



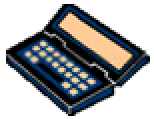
Black List Mode



Counter measures with HTTP IDS



White List + Black List



Client

RFC conformity check

HTTP Headers Management

KO

OK

OK

OK

HTTP Firewall

(Partial White List)

HTTP Firewall

(Full White List)

KO

Reject

+

Alerts

Logs
SNMP
SMTP
SMS

OK

OK

OK

HTTP IDS

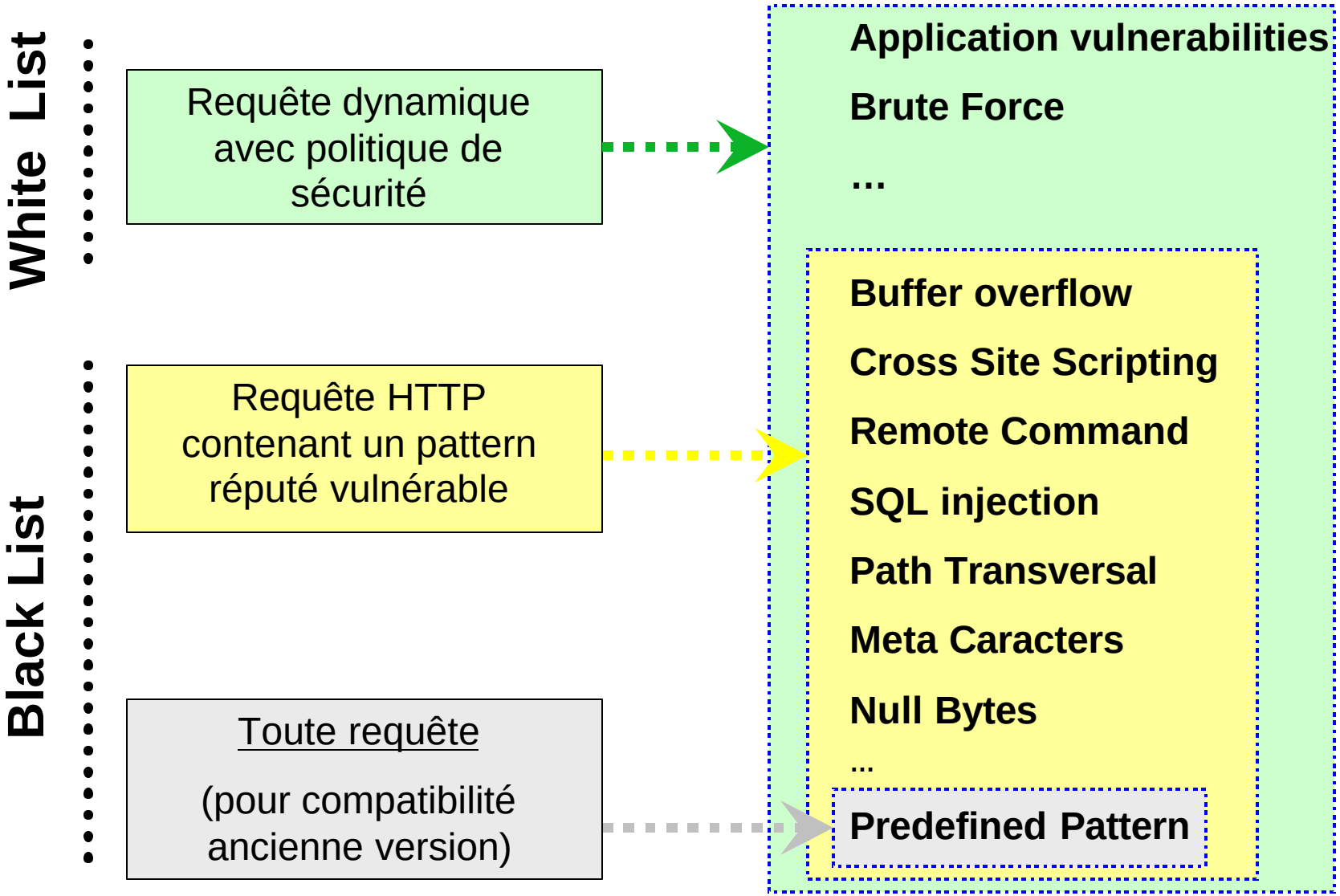
(Black List Protection)

KO

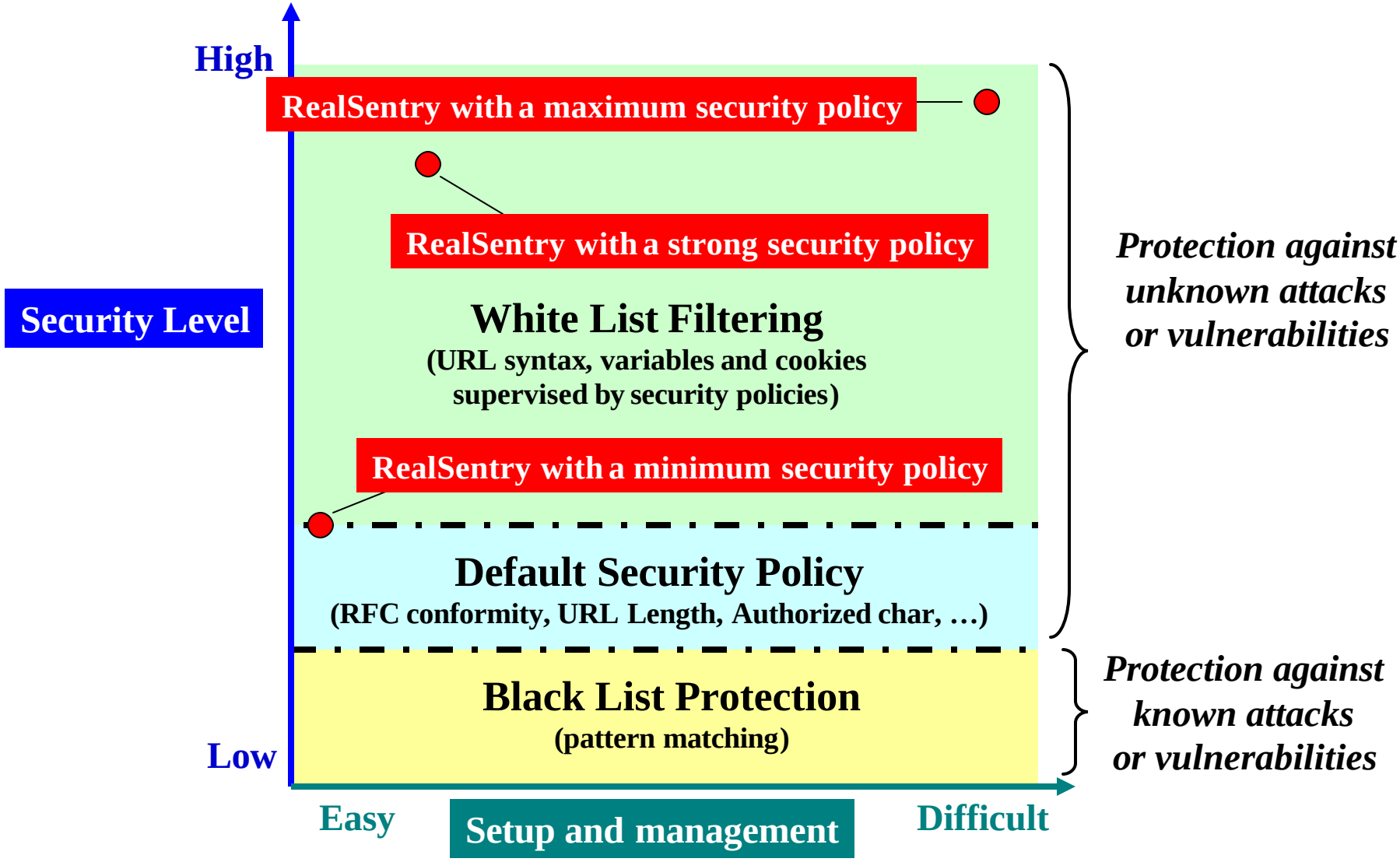
OK

Web Server

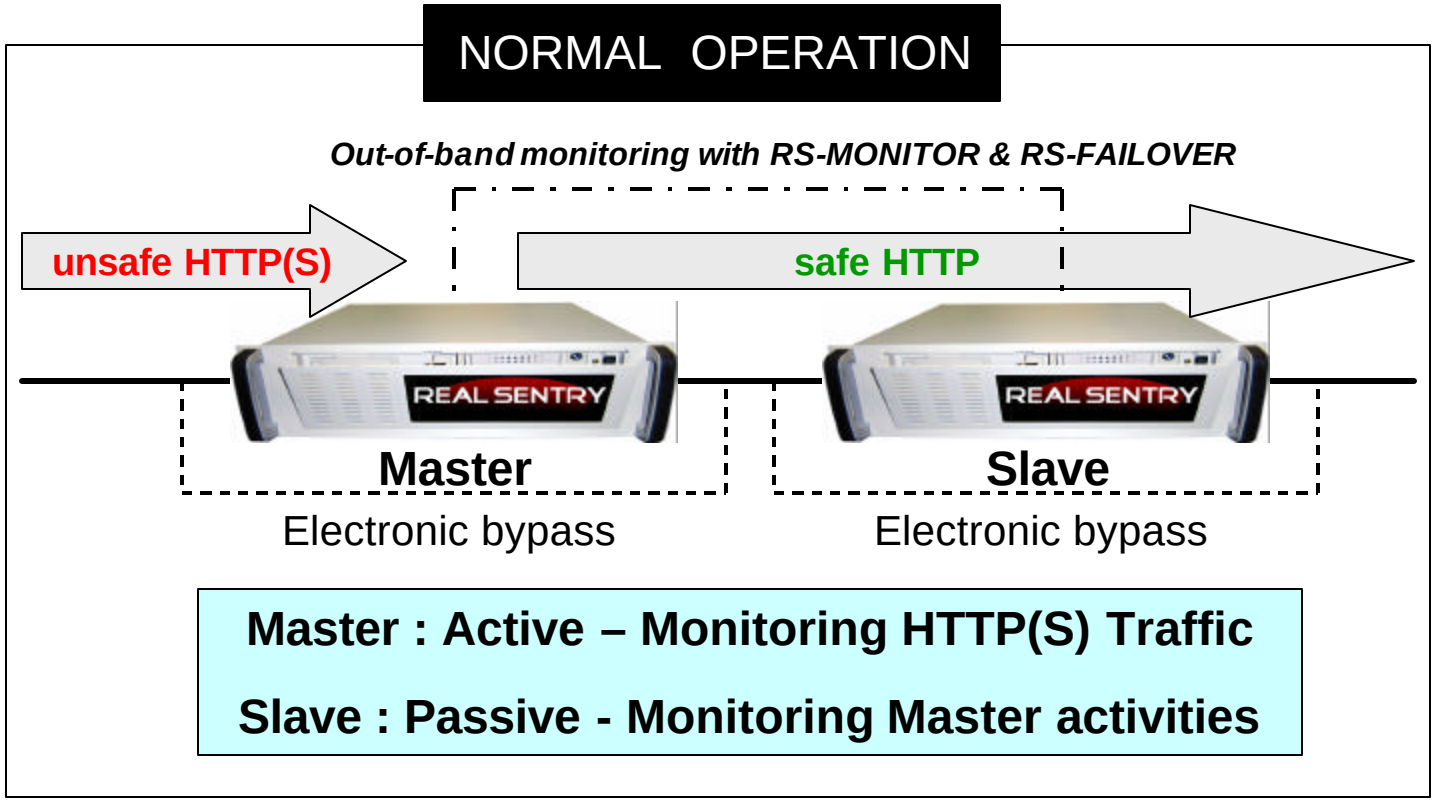
Counter measures with IDS et FW HTTP



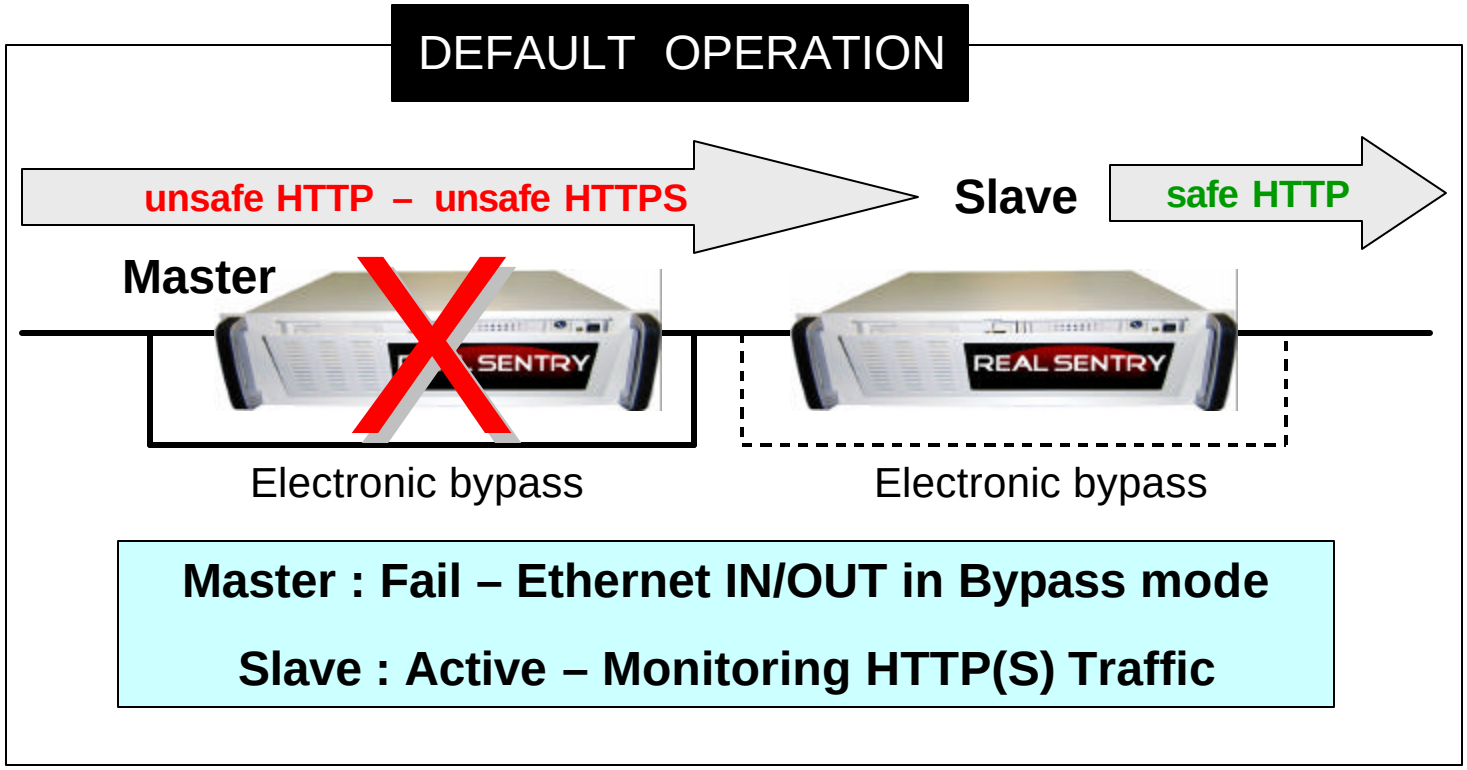
RealSentry Security Level



High Availability : Normal operation



High Availability : Fault operation



RealSentry SSL v1.0 Features

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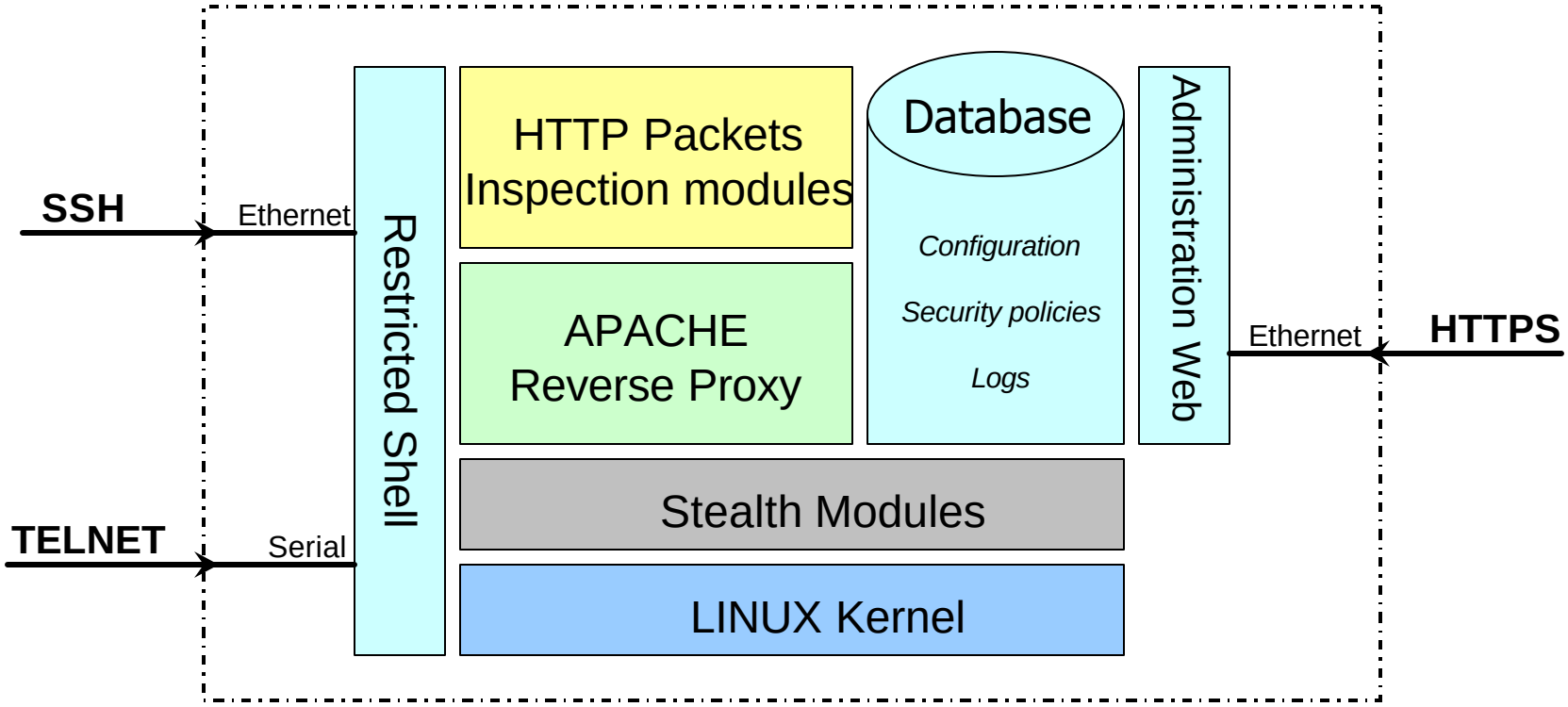
APPLIANCE	Integrated solution (hard and soft)
SSL ACCELERATION	Boosted and secure encrypted traffic
INTRUSION DETECTION	Exclusive technology from Axiliance
STEALTH MODE	« Plug and Protect » solution
FAULT TOLERANCE	High availability - 24/7

Competitive Comparisons

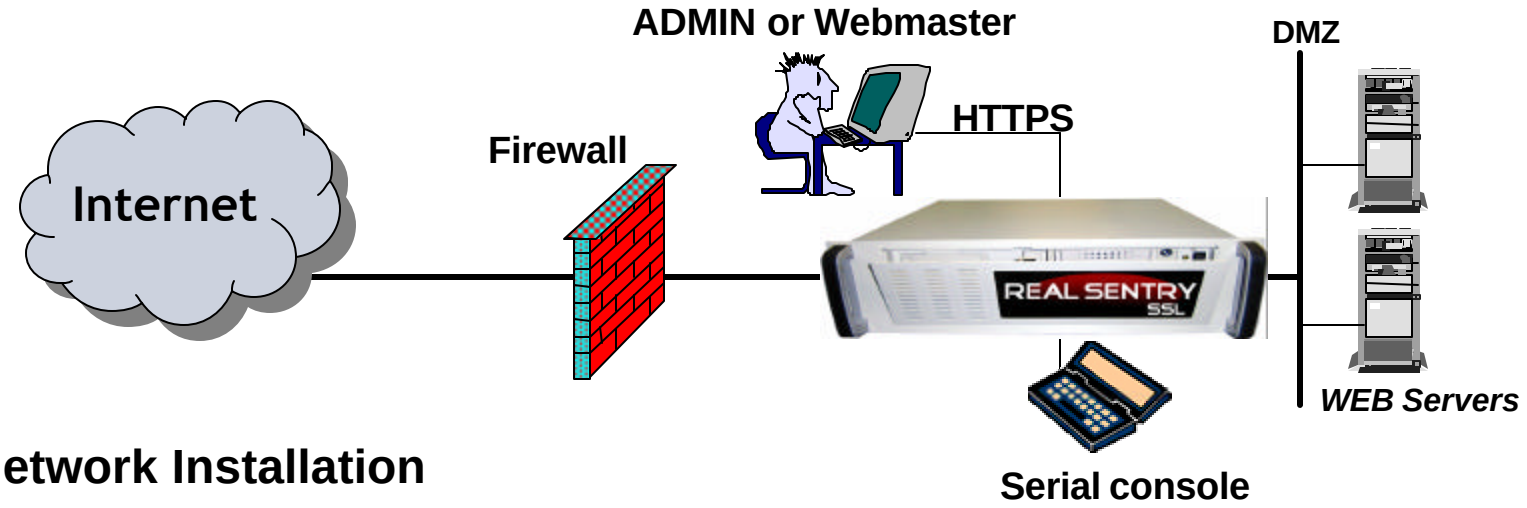
Company	Product	Native Fault Tolerance	Stealth Mode	SSL Acceleration	Appliance
Kavado	Interdo	No	No	Yes	Yes
Sanctum Inc	AppShield	No	Yes	compliant with 3rd party	Option
Deny-All	Rweb	No	No	compliant with 3rd party	No
Ubizen	dmz/shield	No	No	compliant with 3rd party	Option
Stratum 8	APS	No	No	No	Yes
Axiliance	RealSentry	Yes	Yes	No	Yes
Axiliance	RealSentry SSL	Yes	Yes	Yes	Yes

RealSentry : Setup and management

Full out-of-band management by
serial or ethernet interface



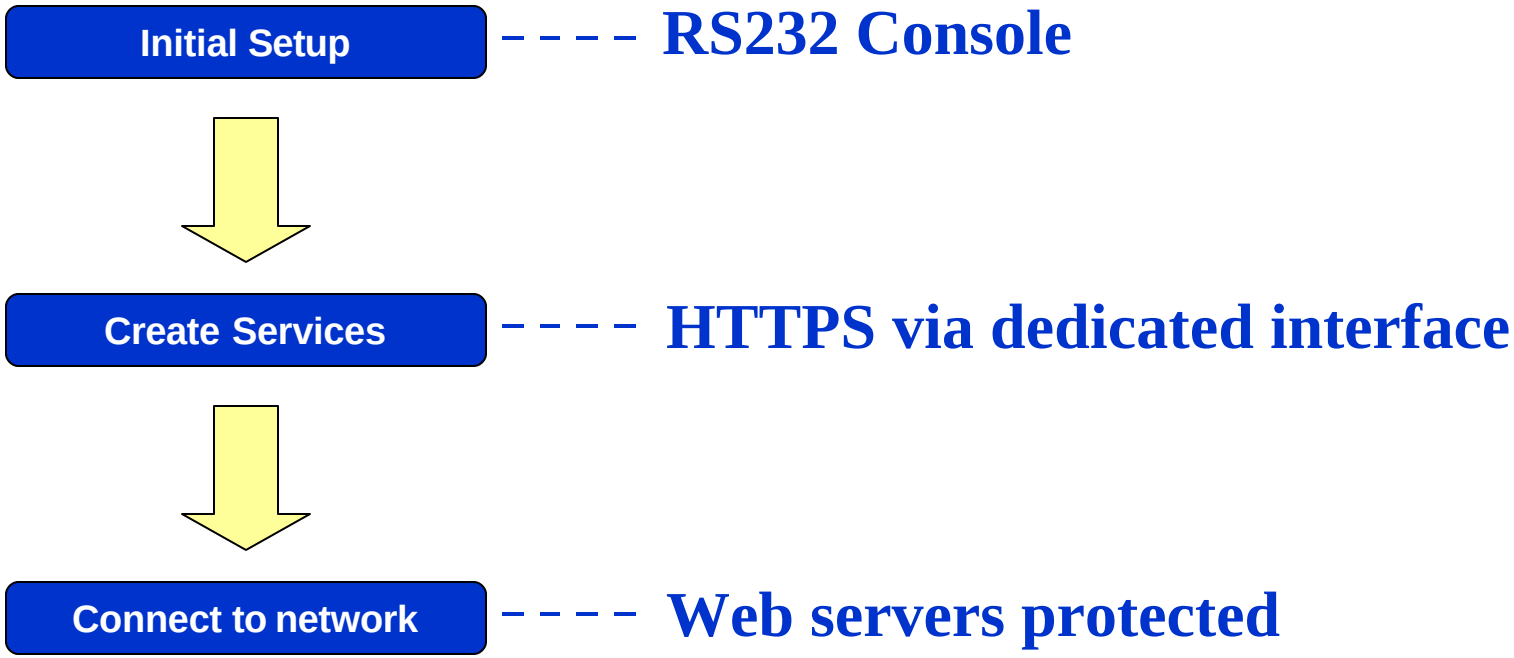
RealSentry : Setup and management



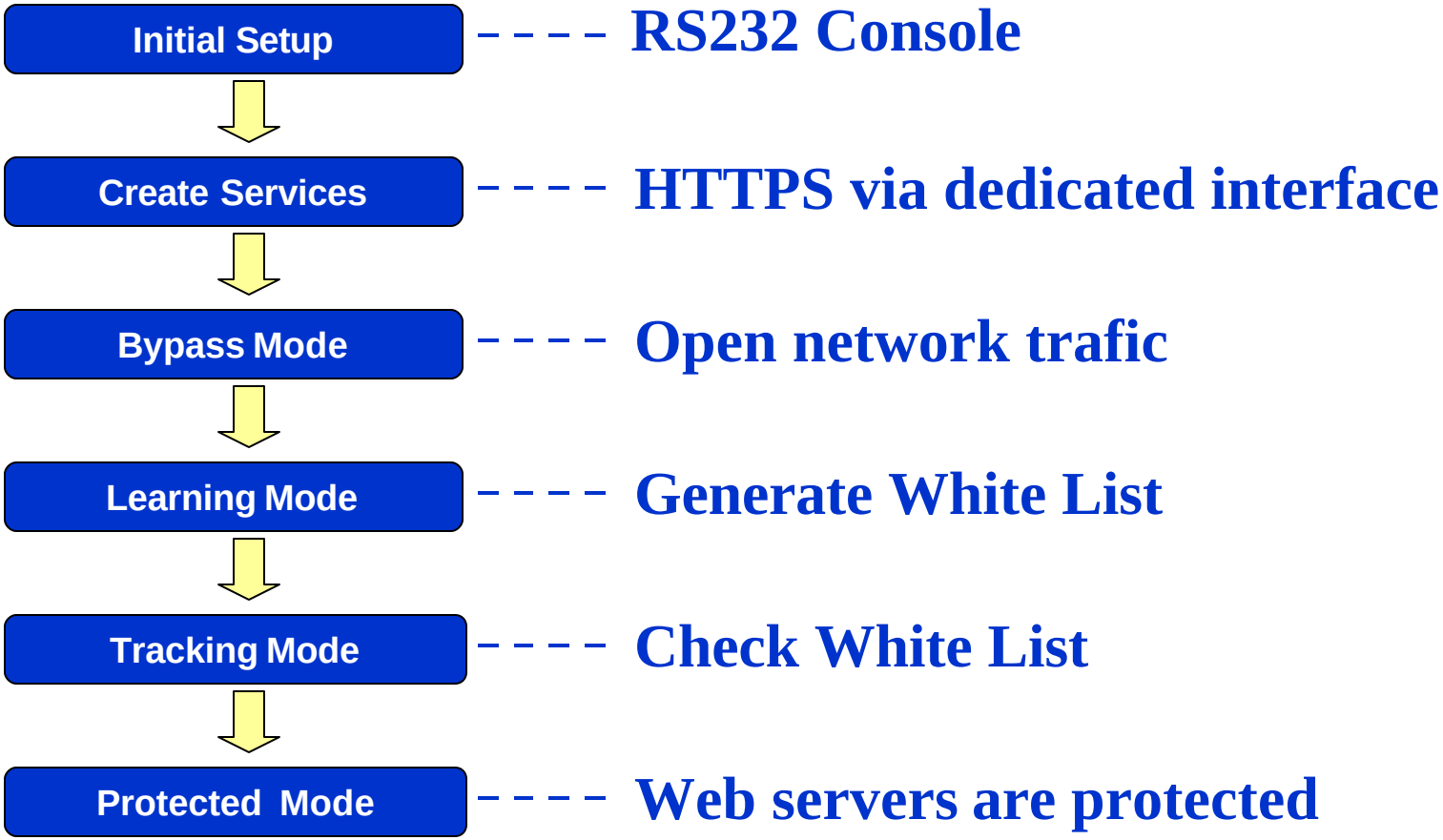
- **Network Installation**
  - First setup by serial console
  - Access restricted to a special account (ADMIN)

- **Management of services and security policies**
  - Network Interface card dedicated to management operations
  - Intuitive and secure Web-based administration (HTTPS)
  - Command line based administration via restricted and secure shell
  - Service creation is only allowed to an administrator account (ADMIN)
  - Each service is associated to one or several Webmaster
  - Services Management is only allowed to the Webmaster

Black List Mode



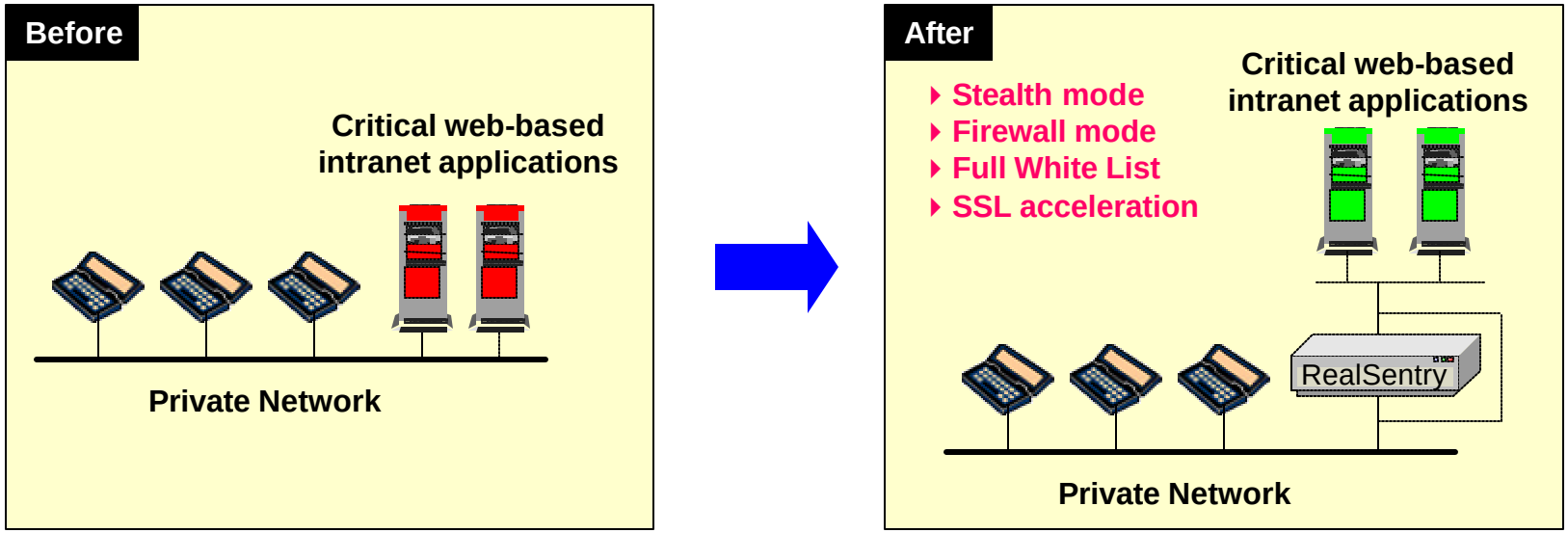
White List Mode



Case Studies

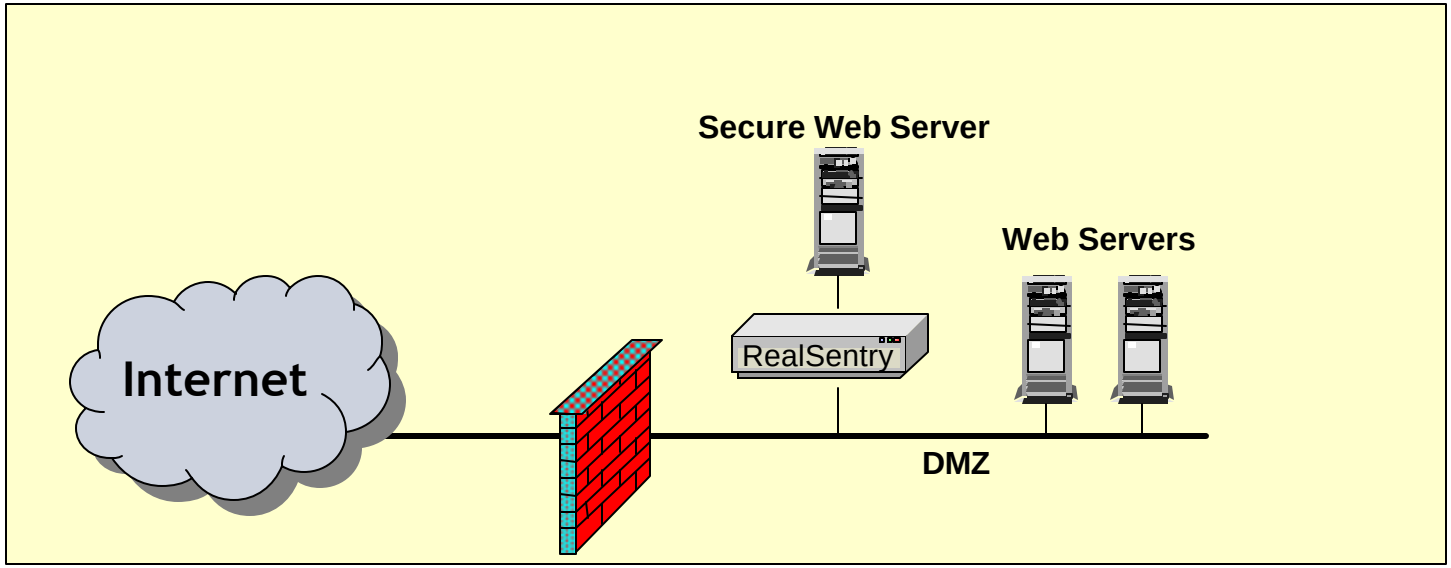
- Case Study 1 : RealSentry SSL protects Intranet Web Servers
- Case Study 2 : RealSentry dedicated for hosting in ISP architecture
- Case Study 3 : RealSentry mutualized for hosting in ISP architecture
- Case Study 4 : DMZ Protection with non transparent mode
- Case Study 5 : DMZ Protection with stealth mode
- Case Study 6 : Multiple DMZ Protection with non transparent mode
- Case Study 7 : Multiple DMZ Protection with stealth mode

CS1 : Intranet Web Servers Protection

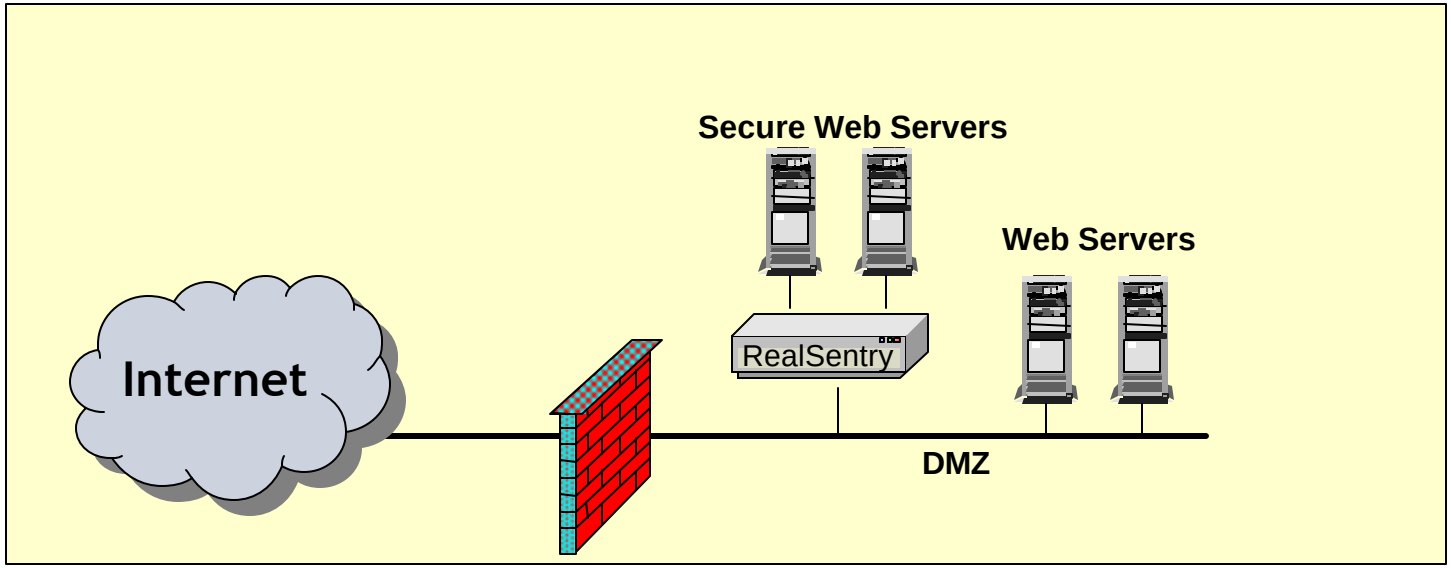


- **Customer benefits :**
  - Forward only HTTP(S) packets to Web Server (Firewall mode)
  - Protect Web server against known or unknown HTTP Attacks
  - Non restrictive SSL usage without need to upgrade server hardware
  - Installation without any network modification
  - Native simple fault tolerance by electronic bypass

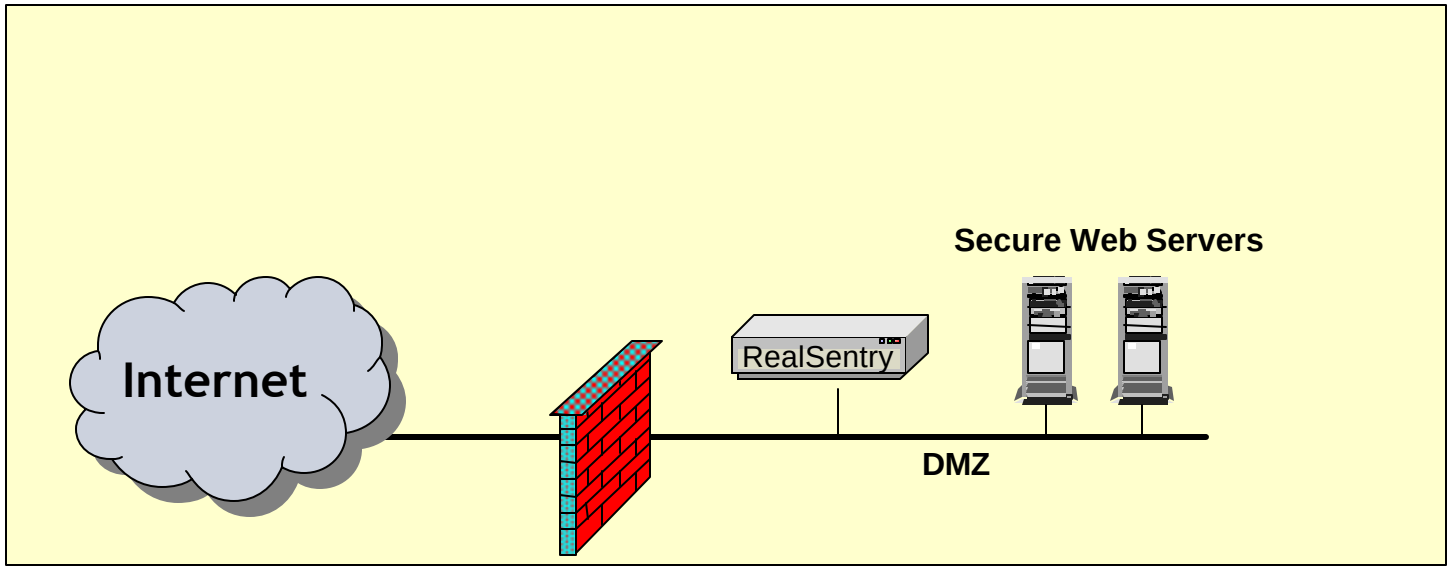
CS2 : RealSentry dedicated for ISP



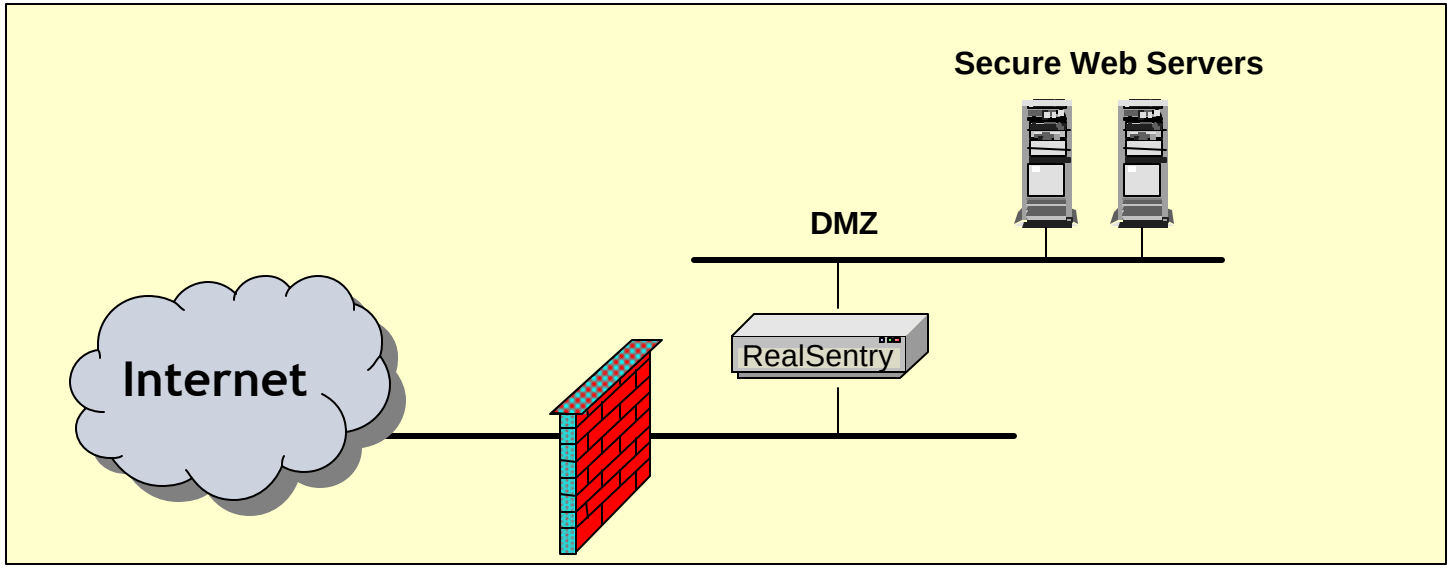
CS3 : RealSentry mutualized for ISP



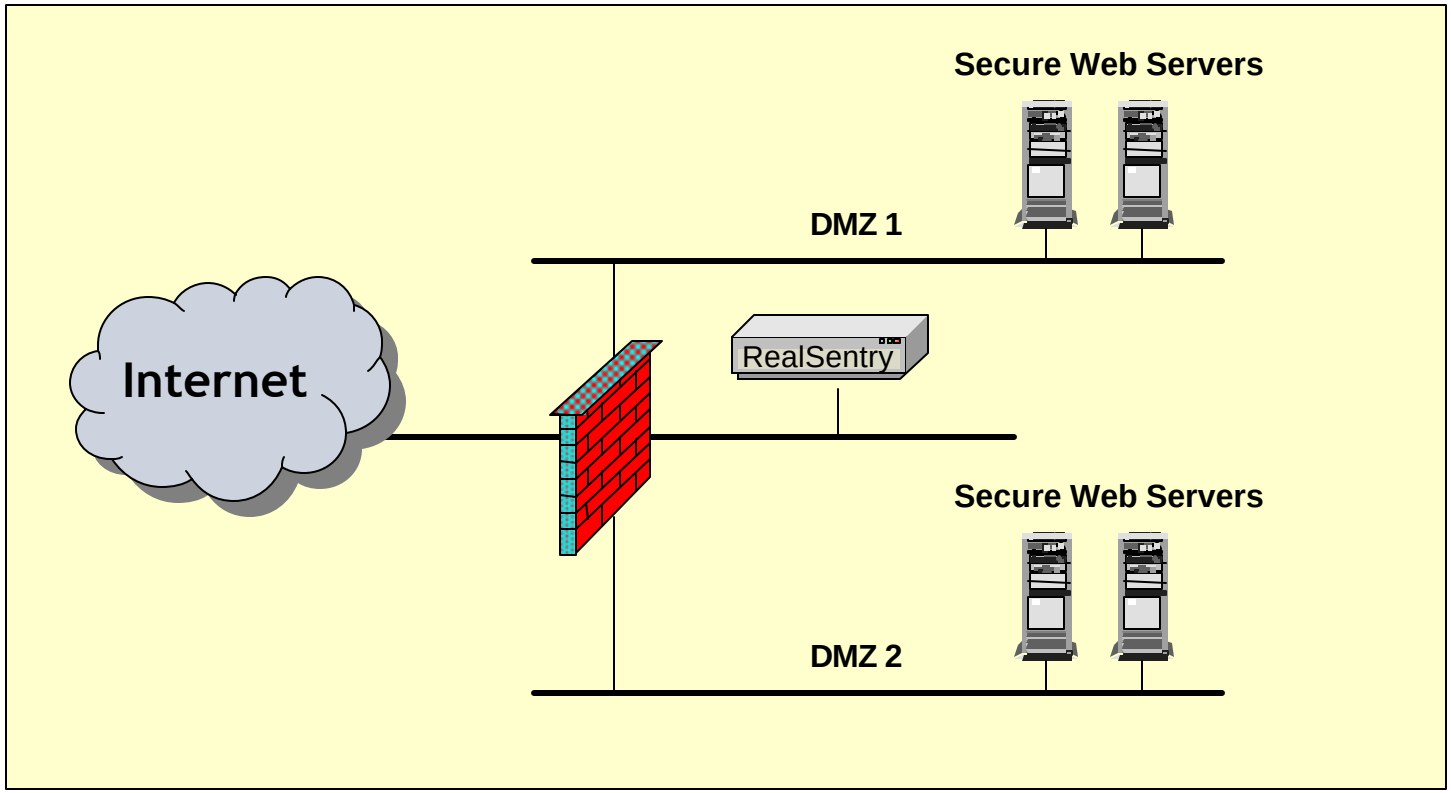
CS4 : Non Transparent Mode



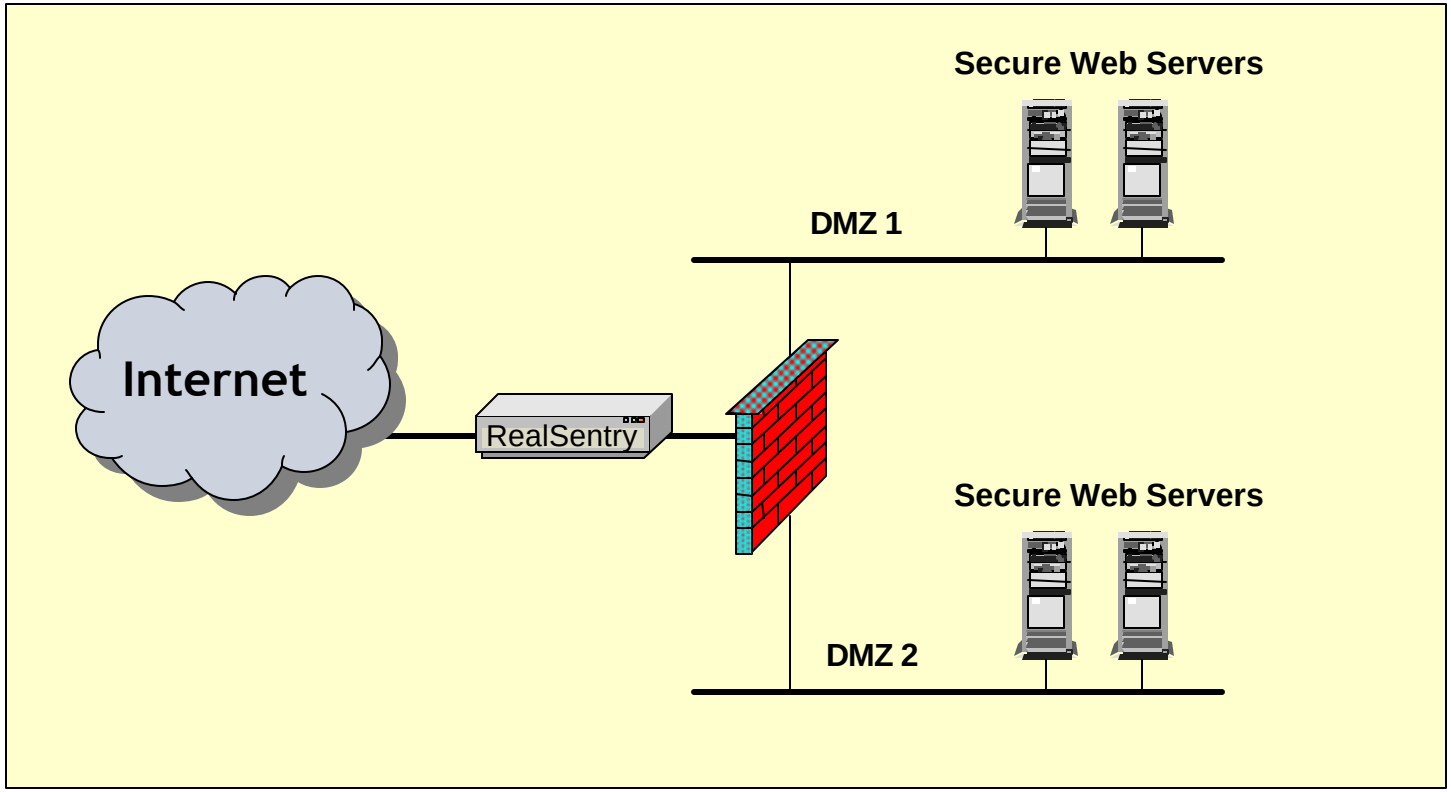
CS5 : Stealth Mode



CS6 : Multiple DMZs – Non Transparent



CS7 : Multiple DMZs – Stealth Mode



Thank you for your attention

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