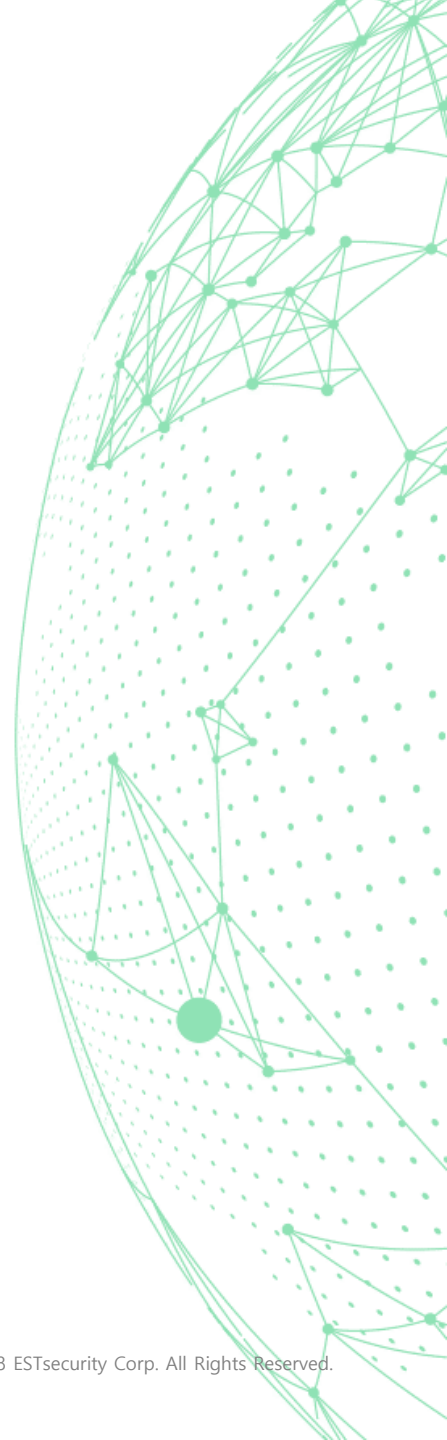


ESTsecurity | Company Introduction 2018

Make World More Secure with A.I.



Index

- 01 Overview
- 02 Competitive Advantage
- 03 Business & Products

01 *ESTsecurity* OVERVIEW

- Message from CEO
- About ESTsecurity
- Company History
- Organizations

Message from CEO | SANGWON CHUNG

ESTsecurity has become independent as a subsidiary of ESTsoft in January 2018 with the goal of becoming the world-class intelligence security provider.

ESTsecurity has been leading the endpoint security industry for the past 10 years through “ALYac Internet Security” which has the largest number of users in Korea, and has been protecting 5 million users’ smartphones through “Dr.Capsule” mobile antivirus.

Now, not only PCs but all the devices around us are connected to each other and make life easier. But because of that information of individuals, corporations, and public organizations is exposed to risks and attacker’s strategy to exploit vulnerabilities is becoming more sophisticated.

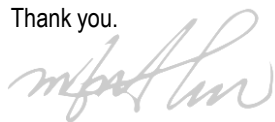
In addition, more than one million malicious codes are created every day around the globe, which actually threatens our daily life, our society, and our nations.

In order to fight against these qualitatively and quantitatively evolving malicious cyber threats, we need to have a new paradigm of cyber security technology. And ESTsecurity is ready to respond to these threats by providing the best intelligence security products and services based on our advanced A.I. technology.

Beyond the current position of the most trusted endpoint security company in domestic market, ESTsecurity now aims to be one of the leading intelligence security companies in the world.

We will do our best to provide the best security products and services with our mission to make world more secure.

Thank you.



CEO at ESTsecurity
SANGWON CHUNG

Current	CEO at ESTsoft & ESTsecurity
Previous	VP at Zum Internet, GM at Altools
Education	Seoul National University

Company Overview

| Making world more secure with A.I.

ESTsecurity, the developer of *Alyac*, the No.1 antivirus software in South Korea, have more than 14 million individual users and over 13,000 corporate customers in the country. The company provides cyber security solutions in 5 major business areas: Endpoint Security, Mobile Security, Data Security, Intelligence Security, and Hybrid-VDI.

Company Name	ESTsecurity Corp.
CEO	Sangwon Chung
Company Foundation Date	Jan 3, 2017
Location of HQ	EST bldg. 3 Banpo-daero, Seocho-gu, SEOUL, KOREA
Business Area	Cybersecurity Software R&D / Sales
Number of Employees	126 (as of Jun. 2018)
Official Homepage	www.estsecurity.com

Company Milestones

| Making world more secure with A.I.

1993 ○ Foundation of ESTsoft

2000 ○ Launched *InternetDisk 1.0*

2007 ○ Launched *Alyac 1.0*

2009 ○ Launched *Alyac 2.0 for Business*,
Received International CC certificate

2010 ○ Launched *SecureDisk* and
Alyac Android 1.0

● Oct 1993 Founded ESTsoft

● Jan 2000 Launched *InternetDisk 1.0*

● Dec 2007 Launched *Alyac 1.0*

● Feb 2008 *InternetDisk 5.0* selected as official software by Korea Software Industry Association

● Dec 2008 Awarded 'Hit Product' in Security Category by *Digital Times*

● Sep 2009 Launched *InternetDisk 6i*

● Sep 2009 Launched *Alyac 2.0 for Business*

● Dec 2009 *Alyac* to receive international CC certificate

● Jul 2010 Launched *SecureDisk*

● Jul 2010 Launched *Alyac 2.5 for Business / for Server*

● Dec 2010 Launched *Alyac Android 1.0*

● Dec 2010 Launched *InternetDisk App* (for iPhone)

● Nov 2011 Launched *InternetDisk App* (for Android)

● Jul 2011 *Alyac Android* awarded 'IT Innovation Prize' by *Digital Daily*

2011 ○ Alyac selected as 'Top 30 Remarkable Korean S/W of the year' and received Checkmark & VB100 security certificates

2011 ○ Alyac received 'Korea's Best Brand Award of the Year'

2014 ○ *Alyac Android* passed 10 millions downloads

2016 ○ Launched *IMAS*, *Alyac PMS*, and *Alyac MPI*

- Jul 2011 *Alyac* selected as one of the 'Top 30 Remarkable Korean S/W of the year' by Korea S/W Companies' Association
- Jul 2011 *Alyac* 2.5 received Checkmark Security Certificate from *Westcoast Lab*
- Oct 2011 Launched *Alyac Android Premium*
- Nov 2011 *Alyac* received VB100 Security Certificate from *Virus Bulletin*
- Nov 2011 *Alyac* awarded Hit Product of 2H 2011 by *Digital Times*
- Apr 2012 *Alyac* received Korea's Best Brand Award (by *Hankyung.com*, *Imbc*, and *Donga.com*)
- Jul 2012 *InternetDisk 6i* selected official S/W
- Dec 2012 *Alyac* awarded Hit Product of the year by *Digital Times*
- May 2013 *Alyac* 3.0 & *ASM* 3.0 received International CC Certificate
- May 2013 *Alyac* 3.0 for Server received International CC Certificate
- Sep 2014 *Alyac Android* passed 10 mil. downloads
- Apr 2016 Launched *IMAS* (Intelligent Malware Analysis System)
- Nov 2016 Launched *Alyac PMS* & *Alyac MPI*

2017 ○ Founded ESTsecurity Inc.

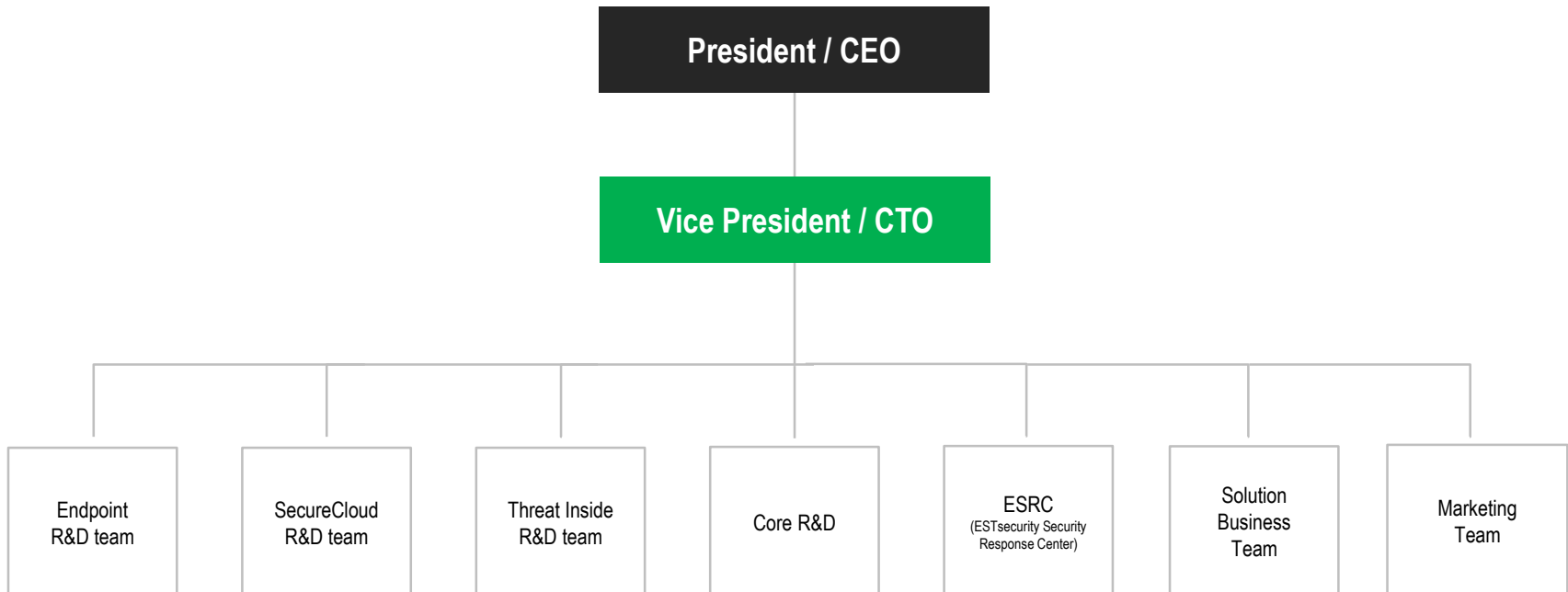
- Jan 2017 Founded ESTsecurity as a subsidiary of ESTsoft
- Jan 2017 Launched *RansomShield Cloud* 1.0
- Jan 2017 Launched *RansomShield PC* 1.0
- Oct 2017 *Alyac Android* passed 14 million downloads
- Dec 2017 Launched *RansomShield Enterprise*

2018 ○ Launched *Threat Inside* and *Flash-V*

- Jan 2018 Launched *Alyac M* 2.0
- Mar 2018 Launched *Threat Inside* Beta version
- Mar 2018 Launched *Flash-V* (Hybrid-VDI type)
- Apr 2018 *Alyac* awarded 5-year ICSA EIST award
- Jun 2018 *Alyac* awarded 5-year ICSA EIST award
- Oct 2018 Launch *Threat Inside*

Organizational Chart

| Making world more secure with A.I.



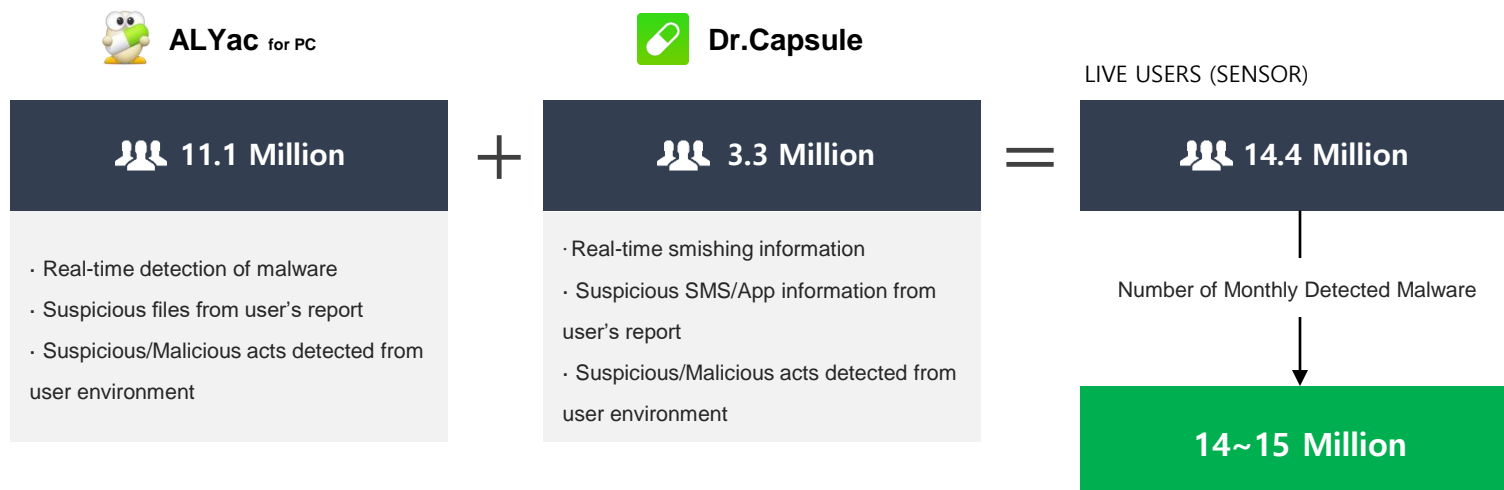
02 *ESTsecurity* Competitive Advantage

- No.1 Users in South Korea : 14 million users
- ESRC: A Group of Talented Malware Analysts
- Advanced A.I.(artificial intelligence) Technology

South Korea's No.1 Antivirus Software Provider

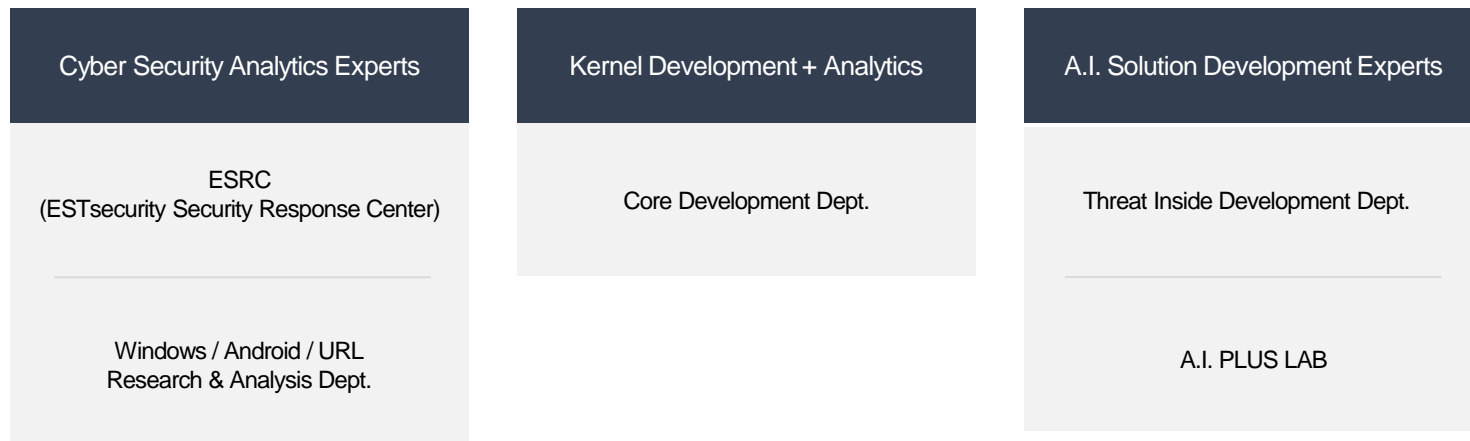
ALYac with the largest number of users (sensors)

ALYac Internet Security and Dr.Capsule for Android mobile is the most loved antivirus software products in South Korea. ESTsecurity collects more than 14 million malware from its endpoint security products in operation and over 40,000 malware from Dr.Capsule app per month. The largest number of sensors and the database of viruses and malware are one of the crucial elements for ESTsecurity to move forward to the leading next-generation cyber security solution provider.



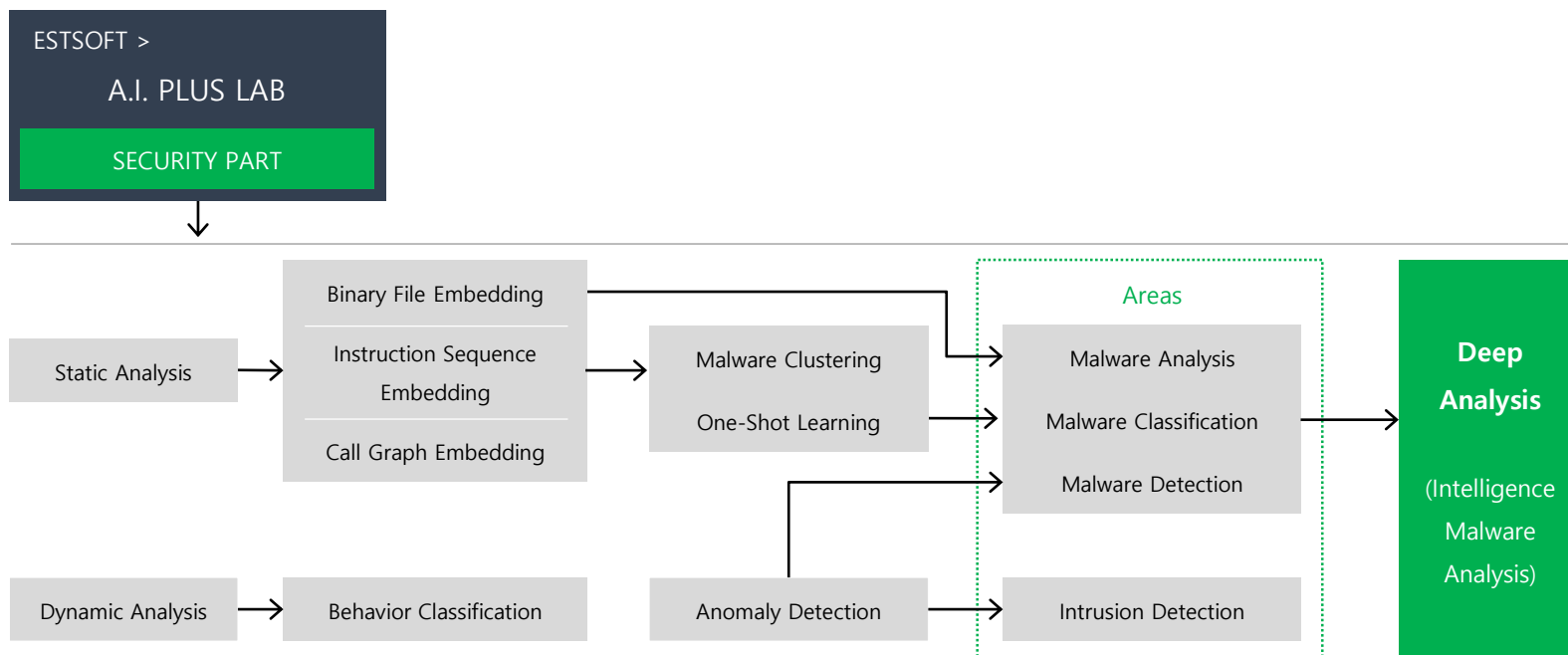
Over 10-years of Antivirus Business Expertise & Technology

ESTsecurity has the most advanced level of malware analytics expertise built up thought over 10-year experience in antivirus business. We have more than 40 malware analysts at ESRC(ESTsecurity Security Response Center) and over 100 cyber security software development experts, which is our main assets for the powerful cyber threat response.



A.I. Technology Optimally Designed for Cyber Threat Response

We have cybersecurity experts inside A.I. PLUS Lab, who has long developed A.I. technology to apply to our intelligence security solution, Threat Inside. Our deep learning algorithm is the key element of the classification and identification of unknown malware.



Top-level A.I. Technology in the Korean Cybersecurity Industry

TECHNOLOGY	DEFINITION	Target Area
Binary File Embedding	This technology studies patterns from the whole binary file with CNN-based deep learning and expresses them in similar vectors. Regardless of which part of a file includes malware, it can determine whether it is malicious.	<ul style="list-style-type: none">• Malware Analysis• Malware Classification• Malware Detection
Instruction Sequence Embedding	This technology finds and studies meaningful sequence patterns similarly appearing in various types of malware from command sequences and binary sequences existing in binary files. Based on this function, it can detect the type and location of malicious behavior.	<ul style="list-style-type: none">• Malware Analysis• Malware Classification• Malware Detection
Call Graph Embedding	This technology expresses functions with practically similar graphs in similar vectors based on function call relations. It can detect similarity with the original functions even though function symbols may be obfuscated or a partial function is separated.	<ul style="list-style-type: none">• Malware Analysis• Malware Classification• Malware Detection
Malware Clustering	Using a variety of vector embeddings, this technology clusters similar types of malware based on various standards. Furthermore, it gives new detection names based on more consistent standards than the preexisting categorization system operated by humans.	<ul style="list-style-type: none">• Malware Analysis• Malware Classification• Malware Detection
One-shot Learning	Although deep learning originally requires a large number of learning samples for each category, this technology can easily add malware to the deep learning model and respond to it quickly, even for newly found malware that lacks samples.	<ul style="list-style-type: none">• Malware Analysis• Malware Classification• Malware Detection
Behavior Classification	Based on data obtained from the results of dynamic process execution, this technology classifies process behaviors.	<ul style="list-style-type: none">• Malware Detection• Intrusion Detection
Anomaly Detection	This technology studies probability distributions observing data or behaviors and detects events which rarely occur in the probability distribution.	<ul style="list-style-type: none">• Malware Detection• Intrusion Detection

03 ***EST*security** Business & Products

- ALYac Internet Security
- ALYac Internet Security Pro
- ALYac My PC Inspector
- ALYac Patch Management
- Dr.Capsule
- SecureDisk
- Threat Inside
- Flash-V

Business Scope

ESTsecurity is running the 5 major business areas in cybersecurity domain: Endpoint Security, Mobile Security, Data Security, Intelligence Security, and Hybrid-VDI. Beyond the current position of No.1 Antivirus Software Provider, ESTsecurity pursues to become the No.1 Intelligence Security Company by the year of 2025.

BUSINESS AREA	DEFINITION	PRODUCTS
Endpoint Security	Real-time Detection and Removal of Malware	<ul style="list-style-type: none">• ALYac Internet Security• ALYac Internet Security Pro• ALYac My PC Inspector• ALYac Patch Management
Mobile Security	Detection/Removal of Malware and Spy Apps Monitoring/Removal of Spam & Smishing	<ul style="list-style-type: none">• Dr.Capsule
Intelligence Security	A.I.-based Engine for Malware Classification (Deep Core) Multi-dimensional Malware Analysis and Identification (Deep Analysis) In-depth Intelligence Report for Threat Response (Deep Insight)	<ul style="list-style-type: none">• Threat Inside
Data Security	Data Leaks/Loss Prevention & Response to Ransomware Attacks Centralization and Integrated Management of Corporate Data Assets	<ul style="list-style-type: none">• SecureDisk• InternetDisk• RansomShield Enterprise
Hybrid-VDI	Fast, Secure, and Easy-to-control Virtual Environment Combining Virtual OS based on LAN-booting and Powerful Data Security Centralization System	<ul style="list-style-type: none">• Flash-V

Endpoint Security

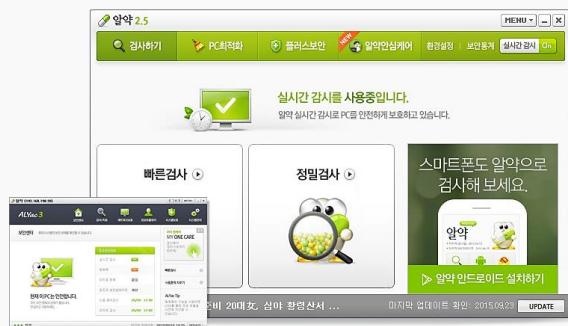


ALYac Internet Security

| Security Upgrade for Everyone

ALYac has **more than 11 million of monthly users in S.Korea**, which makes it No.1 Antimalware solution in the country. ALYac has evolved as the impeccable total security solution that detects and responds to all kinds of malware threats.

ALYac provides overall visibility of the malware threats and their detection, prevention and response. As optimized in every endpoint protection aspect, ALYac seamlessly protects endpoints against not only ransomwares, security vulnerabilities but also other unknown threats.



01 Powerful Malware Detection

- High detection rate by Triple Engine – Tera, Bitdefender, Sophos - proven by multiple global certifications
- Detects and disinfects malicious files from viruses to other malwares such as Adwares and Rootkits

02 Real-time Monitoring

- Detects and prevents malware infection in real-time
- In case of malware detection when installing unauthorized programs, ALYac suspends the process and notifies of the infection.

03 Proactive Protection and Ransomware Block Feature

- Proactive protection based on the superior behavior detection technology
- Blocks user file encryption in advance
- Reinforces ALYac's ransomware detection DB by collecting suspicious infection files

04 Self-Protection

- Protects files and processes from the malwares attempting to neutralize ALYac
- Prevents various attacks from hacking tools

Endpoint Security

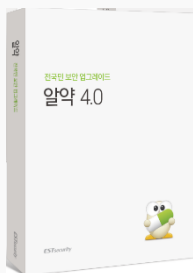


ALYac Internet Security Pro

| Powerful Anti-malware for Enterprise Security

ALYac protects endpoint system from global malware threats by powerful Triple Engine with proven high detection rate. It also prevents threat invasion through Real-time monitoring, Network protection, Device control features.

ALYac has the intelligent and professional security system with simple & convenient UI. It is the best security solution for enterprise.



01 Precise Detection Rate

- Overall detection based on global malware threat DB and No.1 user sensors in South Korea
- High detection rate by Triple Engine – Tera, Bitdefender, Sophos - proven by multiple global certifications

02 False Positive Verification System

- Minimizing false positives through false positive verification process of OS, security programs and general-purpose programs before updates

03 Data Leakage Prevention

- Prevents data leakage through USB and portable storage devices by Device Control feature

04 Fast and Light Scanning

- Categorizes files to scan for Real-time monitoring or Advanced scan by Smart Scan technology
- Omits proven clean files from scanning to speed up and to reduce overloads

Endpoint Security



ALYac My PC Inspector

| The First Step to Enterprise Security

ALYac My PC Inspector is PC vulnerability management solution which helps security manager to conduct security inspection of enterprise PCs, and take actions to mitigate vulnerabilities according to the result. It can improve the enterprise security level in total by regular security inspections and taking proper actions.



01 Intuitive Vulnerability Inspection

- Provides dashboards to check vulnerability status at a glance
- Easy and simple management of enterprise security level by checking Security score and PC status according to the inspection results

02 Various Inspection Items

- Expandability of additional advanced inspection items such as OS, system, web browser and networks
- Improves PC management level by expanding automatic action ranges and by providing detailed manual action guide for user

03 Total Security System

- ASM keeps enterprise clients updated and executes installation at once
- Applies coherent policies by users or by departments and manages inspection results at once
- Provides total security system just by licenses without extra server construction

04 Efficient Security Management

- Provides vulnerability inspection reports by users or by departments

Endpoint Security



ALYac Patch Management(PMS)

| Safe and Efficient Patch Management Solution

ALYac Patch Management(PMS) helps security manager to check Windows Updates and general S/W patch status of enterprise PCs in real-time and to distribute patch files at once. It protects enterprise security system against variety of potential threats by recent patch updates.



01 Differentiated Usability

- Provides visualized dashboards and statistic reports for patch status check
- Supports dashboard customization by purposes
- Easy process and policy command with linkage to the organization chart

02 High Efficiency

- Provides total security system just by ALYac licenses without extra server construction
- Provides management efficiency with linkage to the organization HR DB
- Provides total security management through ASM4

03 Efficient Patch Management

- Supports background patches of Microsoft patch updates
- Maintains coherent security policies by users or by departments
- Provides various options of schedule or installation, for example patch unavailable time, rollback, queue days, patch volume limits and etc.

04 Excellent Stability

- Distributes secure patch files confirmed by verification tests
- Automatic patch installation by PC environments or by PC status
- Ensures patch distribution stability by automatic distributed processing of distribution traffics

Mobile Security



Dr.Capsule

| A Smart Dose for Android Security

Dr.Capsule which has more than 14 million cumulative download numbers, as the No.1 total mobile security app, provides strong android security and utility features such as memory optimization, which makes worldwide mobile environment safe and secure.

Dr.Capsule supports Cloud Scanning since 2015, which makes it become an unrivaled mobile security app by detecting and disinfecting new malwares or variants in real-time. Dr.Capsule gives users warm and joyful experience by the lightest UI and one-touch button for convenient management.



01 Real-time Monitoring/Disinfection of Malicious Apps

- Scans when slowdown or abnormal condition of mobile phone caused by malicious apps
- Provides app safety level information when new app installation, update or running
- Alerts when installation of repackaged apps that disguised as famous game apps but contain malwares

02 Monitoring and Blocking Smishing Text Message

- Provides Smishing and Spam monitoring feature
- Blocks dangerous messages immediately

03 Smartphone Optimization for Faster and Safer Use

- Provides Memory Optimization feature which terminates unnecessarily running apps
- Cleans up temporary cache data and unnecessary files at once

04 Battery Saver for Efficient Power Consumption

- Shows current battery status at a glance and checks & terminates battery consuming apps
- Provides Hyper charger, Sleep mode and Power saver mode

Data Security



| Document Centralization: Next-Generation Data Security

SecureDisk's Filter Driver Technology fundamentally blocks data leakage by controlling system I/O in kernel level and prohibiting documents from being saved on local PCs.

In this era of increasing ransomware attacks, SecureDisk can build the safer document usage and sharing environment by centralizing important/confidential documents following the corporate document protection policy.



01 Document Leakage & Loss Prevention

- Blocks document storage in local PCs depending on the policy set by the manager
- Convenient setting to block screenshots, clipboard copy, USB storage, print-out, etc.
- Prevent document leakages through e-mail, webhard, online messengers, etc.

02 Integrated Data Storage on SecureDisk Server

- Enhances business efficiency & continuity by data centralization
- Data encryption technology to prevent data leakages and loss
- Convenient access control by location/folder based on the organization's data protection policies

03 Ransomware Prevention

- Quick and safe recovery of lost documents by version control function
- Blocks any unauthorized programs to prevent ransomware that falsifies and stores documents

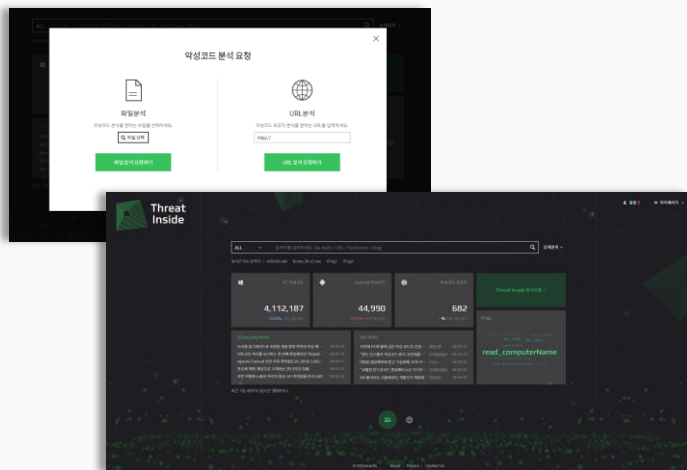
Intelligence Security



Threat Inside

| Malware Analysis & Response Solution

Threat Inside is the unprecedented 'Malware Analysis & Response Solution' providing three elements – Deep Core, Deep Analysis, and Deep Insight – to the corporates and public organizations with high necessity for precise and accurate malware analysis and intelligence report for immediate response against the threats.



01 Deep Core _ *A.I. engine*

- A.I. engine's performance enhanced by self-training (deep learning) of real-time detected malware
- Classifies unknown malware and variants based on deep learning technology
- Minimizes false detection rate through double-checking process by the false-positive verification system

02 Deep Analysis _ *Multi-Dimensional Analytics System*

- Implements the full range of threat and malware analysis: static / dynamic / network / reputational analysis
- Provides not only features and behaviors of the malware but also the intelligence of its related threats
- Provides level-based analysis information for corporate IT managers and professional malware analysts

03 Deep Insight _ *Intelligence Report for Threat Response*

- 'Intelligence Report' written and provided by the cyber security experts at ESTsecurity
- Provides detailed intelligence on malwares: It provides not only the malware classification result but its detailed features and purpose of attack so that a security manager could timely take actions against the threats with the help of practical response guide.

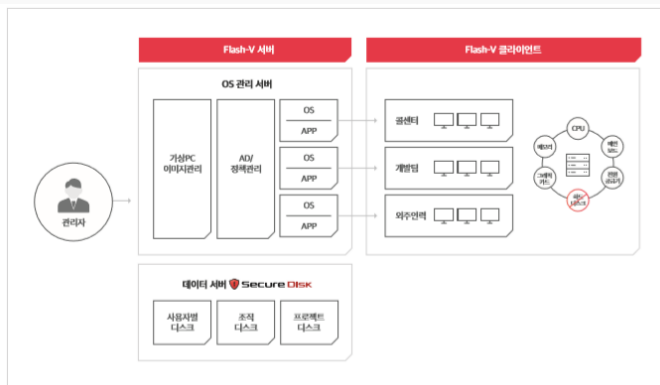
Hybrid-VDI



| Beyond all limitations of conventional VDI

Flash-V is the hybrid-VDI type of virtualization solution combining Virtual OS based on LAN-booting and powerful file security centralization system.

Flash-V utilizes 100% of PC resources to overcome the conventional VDI and to guarantee fast processing and response speed and high performance of virtual system.



01 No More Obstacles from Low Speed!

- Imagificates and reads hard disk where OS is installed
- Fundamentally lowers server load, which maximizes VDI's speed and availability

02 Easy and Convenient Management & Control

- Keeps all PCs updated just by simply updating one representative OS
- Regular backups scheduled by administrator

03 Embedded Secure File Server

- Prohibits storing data on local PCs and maximizes security with SecureDisk / InternetDisk document centralization server
- Convenient working environment with Windows Explorer
- Safe and practical data sharing by creating new disks or setting different policies per department / project

04 Cost-effective ever!

- No need to consider the complicated VDI architectures
- Costs less than 80% for installation compared to the average existing VDI solutions
- Reduces extra cost and time resource for the user extension



Thank You!

ESTsecurity

ESTsecurity Corp. Banpo-daero 3, Seocho-gu, Seoul 06711, S. KOREA