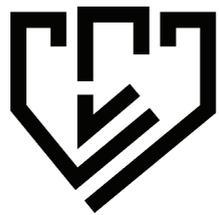


F R O S T & S U L L I V A N



**SILVERFORT**

**2017 Global Authentication and Access Management  
in Critical National Infrastructure  
New Product Innovation Award**

F R O S T & S U L L I V A N

2017

BEST  
PRACTICES  
AWARD

GLOBAL AUTHENTICATION AND ACCESS MANAGEMENT  
IN CRITICAL NATIONAL INFRASTRUCTURE  
NEW PRODUCT INNOVATION AWARD

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## Background and Company Performance

### *Industry Challenges*

Cybersecurity is one of the most rapidly growing segments of the security industry. Driving this growth is the demand for reliable, cutting-edge solutions that can counter increasingly sophisticated and evolving threats. A cyber-attack on critical national infrastructure (CNI)—from financial services to healthcare or governments—could be damaging; tailored solutions for each vertical are becoming vital.

Credential-based attacks and intentional or accidental insider misuse are among the most common in an organization. Credential-based attacks include impersonating another user using a stolen ticket or stealing encrypted user credentials to trick the system into creating a new authentication session on the existing network, or to compromise additional workstations and servers in that network. Malicious insiders can steal or jeopardize confidential company information; tech-savvy employees can use their expertise to breach and access confidential information. Accidental security breaches often occur because of negligence, where an employee is tricked into revealing company-specific information or authentication credentials through phishing attacks.

Attacks can affect an organization's operations, security integrity, finances, and reputation. For instance, a large-scale, credential-based attack on a healthcare organization can compromise electronic health records and critical patient information.

### *Technology Attributes and Future Business Value*

Silverfort is an Israel-based cybersecurity firm that takes a fresh approach to tackling credential-based attacks and insider misuse, using a network authentication platform to achieve the highest level of protection for all sensitive resources across an organization's entire network.

### **Technology Impact**

Employees use specific passwords to protect various organizational resources, most of which rely on services such as Active Directory, Linux Directory or Cloud Directory for authentication and authorization. These services often function based on susceptible authentication protocols and mechanisms. Silverfort has added an extra layer of security to these protocols without replacing them, and without requiring any change to the systems which rely on them. Whenever a client or server sends an authentication or authorization request to the directory (such as Active Directory), Silverfort's authentication solution keeps track of which user is accessing which resource from which device at which time. Upon detection of suspicious activity, or based on flexible policies defined by the organization, Silverfort enforces proactive protection measures to verify the user's identity (via multi-factor authentication or behavioral authentication) and deny access if needed. This allows Silverfort to prevent some of the most common techniques used in data breaches – including the use of stolen credentials (passwords, hashes and tickets) to spread around a network and access sensitive resources. Silverfort also generates real-time alerts and reports regarding access activity and identity-related

threats across all systems and environments. The solution's unique feature is its ability to incorporate an extra layer of protection without installing any additional software or hardware on the client, server, or directory. It can be installed as a virtual appliance, anywhere in an organization, whether on-premise or in the cloud. Silverfort's advantage becomes even more significant when protecting systems across multiple environments – including hybrid and multi-cloud environments. In such cases, Silverfort can provide holistic visibility and protection of all authentication and access across all resources in all environments, even when resources are moved from one environment to another (for example during cloud migration).

Frost & Sullivan believes that Silverfort's solution will be disruptive to the market with its ability to dynamically add protection without incurring any additional installation costs.

### **Scalability and Flexibility**

Silverfort's authentication platform achieves authorization and authentication from within a corporate network, unlike other vendors whose primary focus is securing the authentication from the outside. Today, by compromising a single corporate workstation, it is relatively easy for a skilled attacker to spread within the corporate network, where authentication often relies on vulnerable mechanisms. In order to protect an organization from credential-based attacks and insider misuse, it is crucial that all sensitive resources—domain servers, applications, devices, and files—are secured.

With organizations demanding frequent changes due to regulatory and business needs, incorporating security policies and solutions for each individual sensitive resource is challenging. In most cases, certain resources (such as proprietary, legacy and 3<sup>rd</sup> party systems) are not compatible with standalone security solutions. A solution that can work with all legacy and new resources and is manageable from a centralized point of installation is essential. While many vendors can protect authentication to web applications and VPN gateways (which support modern authentication standards), Silverfort's unique advantage is its ability to protect any kind of resource, without any integration. Silverfort's solution offers an organization complete flexibility to protect any additional network resource, whether on-premise or in the cloud, using a central admin interface. The solution automatically discovers all users, client devices and resources across the network, and allows admins to easily select the ones that they wish to protect. By adding the required systems to the list of protected systems, complete protection is achieved.

Frost & Sullivan believes Silverfort's unique solution has helped it carve a niche for itself in the competitive cybersecurity market by giving an organization additional flexibility and scalability.

### **Product Efficiency**

Silverfort's authentication platform facilitates protection of any resource across a network that includes domain controllers, exchange servers, admin consoles, sensitive applications (including legacy and proprietary), connected devices, or specific files.

Frost & Sullivan has identified a standout feature of Silverfort's solution is its ability to deliver multifactor authentication as an enhancement through its dashboard, which can be applied instantly and seamlessly for any sensitive system, while competitors offer it as a separate functionality which requires integration with each individual system. Whenever a user sends an authentication or authorization request to Active Directory (or another directory) for access to a specific system, Silverfort's solution decides whether additional authentication should be required, based on behavior analysis or pre-defined policies. If additional authentication is required, Silverfort's solution holds the request and simultaneously requests confirmation from a second factor through a separate channel. The primary request is approved only after second-factor confirmation. An important feature Silverfort's platform is that it analyzes authentication requests without decrypting the encrypted requests— therefore even if a server is hacked, the user credentials transmitted across the primary request are protected.

This second-factor authentication can be configured to specific users, groups or resources. It can also consider contextual parameters such as client devices, time, network addresses and more. Third-party vendors that provide specialized authentication solutions can also be configured as the second factor authentication.

A key capability of Silverfort's solution is the ability to provide customized access to specific resources for specific users from a single point of contact. If a user requests access to a restricted resource, the solution can provide a push notification to an admin or to the resource owner; unless the administrator grants approval, the user cannot gain access. The administrator has complete visibility and control over all organizational resources, which is especially useful for monitoring and controlling access of third parties, such as subcontractors, and for protecting highly privileged accounts.

Frost & Sullivan has identified a standout feature of this solution to be its ability to define specific access policies for service accounts (often used for machine-to-machine authentication) as well as human users. A service account, for example, can be defined to only log on from a specific server and can be restricted to only access specific systems. Should the credentials of such service account be compromised (for example because many service accounts are configured with the same password), the attacker's access remains restricted, without the ability to perform lateral movement.

### **Quality and Visionary Innovation**

Frost & Sullivan has recognized a key feature of the solution to be its built-in failover features: If one authentication server is down, another server automatically handles the relevant authentication traffic. Even if all servers are down, authentication can be carried out through remote resources, ensuring zero downtime.

Silverfort's authentication platform is compatible with Active Directory, Kerberos, NT LAN Manager (NTLM), and Lightweight Directory Access Protocol (LDAP); Silverfort is planning to expand functionality to other protocols including HTTPS and SSH. Its ultimate objective is to ensure that an organization can protect authentication and access to all resources across all protocols across all networks. This will eventually include even IoT, meaning that Silverfort will be able to provide strong authentication and access protection even for

different connected devices that lack such capabilities. The company is planning on achieving this by 2019. Silverfort is also planning to enhance its behavior analytics and machine learning capabilities, to allow smarter automated decision making for authentication and access policies, and effective real-time prevention of the most common credential-based attacks and lateral movement techniques. Later on, the company is planning to integrate with additional enterprise systems and data sources (such as HR systems, physical entrances systems and more) to collect additional information about employees, their behavior patterns and their whereabouts, thus enriching its real-time authentication decision making algorithms. This will allow Silverfort to further leverage its unique ability to automatically prevent (and not only detect) malicious access across all corporate resources, without reducing employees' productivity.

### **Customer Experience**

Silverfort has been able to acquire customers across the financial services, technology and healthcare verticals because these companies store their most sensitive data in their networks. The healthcare vertical for instance contains patient records and sensitive personal information which is a highly lucrative target for credential-based and insider misuse attacks. By implementing the authentication platform, healthcare organizations can ensure access to key information such as patient records is secured.

Silverfort has also identified opportunities in the energy and government verticals, which use many legacy systems, because of the solution's compatibility. Silverfort hopes to achieve this expansion by 2019.

The company has added a number of management capabilities to the system interface that allows a customer to understand what goes on within the corporate network and cloud infrastructure. A screen displays all servers and resources, showing which users are accessing them, in real-time or historically, along with information about vulnerabilities and threats. A customer can import the entire log database of all activities to external log repositories or into an Excel file, to identify and rectify issues. Frost & Sullivan believes that interactive and transparent functionalities add unsurpassed value.

### *Conclusion*

A steady increase in credential-based attacks and insider misuse targeting CNIs has created demand for groundbreaking cybersecurity solutions that can proactively deliver better protection and access policy management. While many authentication and access solutions are available in the market, they usually require integration with each protected resource, and are often limited to resources that support advanced authentication standards. This approach does not allow effective, flexible protection of authentication and access across a large network. Silverfort addresses this need by introducing an innovative way to enforce advanced authentication and access protection measures across the entire corporate network and cloud infrastructure, without integration and without software agents. Frost & Sullivan has determined that Silverfort's authentication platform delivers unparalleled security that has helped it to acquire a strong customer base across the financial services, technology and healthcare verticals. The company's current focus on integrating advanced, machine learning-based behavioral analytics into the solution

indicates its efforts to continually innovate in an increasingly competitive industry. By providing inbuilt failover features, Silverfort ensures top-quality protection without interruption. The company's ability to provide comprehensive transparency into the solution's management functionalities in combination with automatic policy suggestions is a best practice that competitors will try to emulate.

With its strong overall performance, Silverfort has earned Frost & Sullivan's 2017 New Product Innovation Award.

## Significance of New Product Innovation

Ultimately, growth in any organization depends upon continually introducing new products to the market and successfully commercializing those products. For these dual goals to occur, a company must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.



## Understanding New Product Innovation

Innovation is about finding a productive outlet for creativity—for consistently translating ideas into high-quality products that have a profound impact on the customer.

## Key Benchmarking Criteria

For the New Product Innovation Award, Frost & Sullivan analysts independently evaluated two key factors—New Product Attributes and Customer Impact—according to the criteria identified below.

### New Product Attributes

- Criterion 1: Technology Impact
- Criterion 2: Scalability and Flexibility
- Criterion 3: Quality and Visionary Innovation
- Criterion 4: Product Efficiency

### Customer Impact

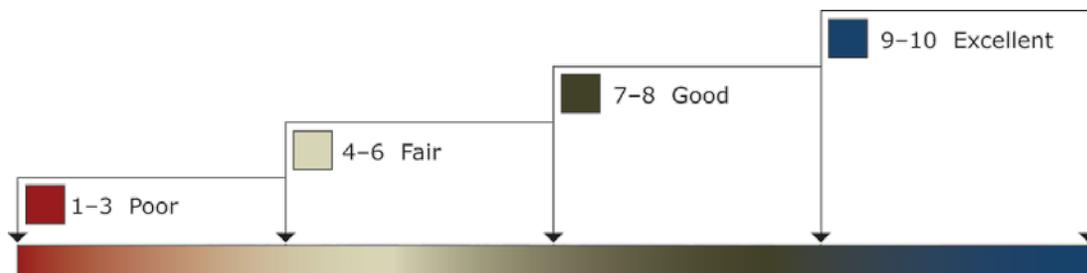
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Experience
- Criterion 3: Customer Service Experience
- Criterion 4: Brand Equity

## Best Practices Award Analysis for Silverfort

### Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation. Ratings guidelines are illustrated below.

#### RATINGS GUIDELINES



The Decision Support Scorecard is organized by New Product Attributes and Customer Impact (i.e., these are the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard.). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, we have chosen to refer to the other key participants as Competitor 2 and Competitor 3.

<i>Measurement of 1–10 (1 = poor; 10 = excellent)</i>			
<b>New Product Innovation</b>	<b>New Product Attributes</b>	<b>Customer Impact</b>	<b>Average Rating</b>
<b>Silverfort</b>	<b>9.5</b>	<b>9.5</b>	<b>9.5</b>
Competitor 2	8.5	8.7	8.6
Competitor 3	7.9	8.1	8.0

### *New Product Attributes*

#### **Criterion 1: Technology Impact**

Requirement: Specific technology helps enhance features and functionalities of the entire product line for the company.

#### **Criterion 2: Scalability**

Requirement: Technology is scalable and flexible, with increasing levels of quality and functionality.

#### **Criterion 3: Quality and Visionary Innovation**

Requirement: Product offers best-in-class quality, with a full complement of features and functionalities. Specific new technology represents true innovation based on a deep understanding of future needs and applications.

#### **Criterion 4: Product Efficiency**

Requirement: Product offers best-in-class efficiency, with a full complement of features and functionalities.

### Customer Impact

#### **Criterion 1: Price/Performance Value**

Requirement: Products or services offer the best value for the price, compared to similar offerings in the market.

#### **Criterion 2: Customer Experience**

Requirement: Customers feel they are buying the most optimal solution that addresses both their unique needs and their unique constraints. Specific technology enables acquisition of new customers, even as it enhances value to current customers.

#### **Criterion 3: Customer Ownership Experience**

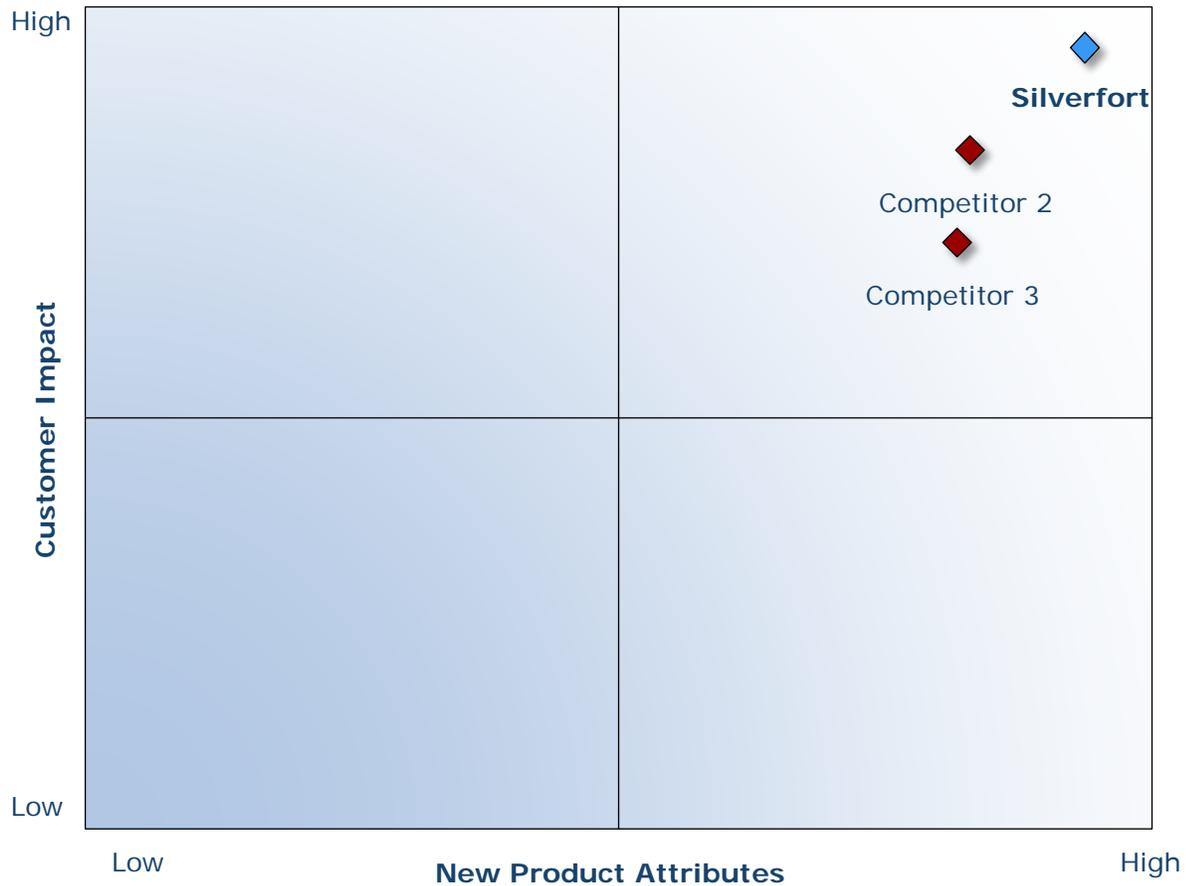
Requirement: Customers are proud to own the company’s product or service and have a positive experience throughout the life of the product or service.

#### **Criterion 4: Brand Equity**

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty.

### Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.



## Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 <b>Monitor, target, and screen</b>	Identify Award recipient candidates from around the globe	<ul style="list-style-type: none"> <li>• Conduct in-depth industry research</li> <li>• Identify emerging sectors</li> <li>• Scan multiple geographies</li> </ul>	Pipeline of candidates who potentially meet all best-practice criteria
2 <b>Perform 360-degree research</b>	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> <li>• Interview thought leaders and industry practitioners</li> <li>• Assess candidates' fit with best-practice criteria</li> <li>• Rank all candidates</li> </ul>	Matrix positioning of all candidates' performance relative to one another
3 <b>Invite thought leadership in best practices</b>	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> <li>• Confirm best-practice criteria</li> <li>• Examine eligibility of all candidates</li> <li>• Identify any information gaps</li> </ul>	Detailed profiles of all ranked candidates
4 <b>Initiate research director review</b>	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> <li>• Brainstorm ranking options</li> <li>• Invite multiple perspectives on candidates' performance</li> <li>• Update candidate profiles</li> </ul>	Final prioritization of all eligible candidates and companion best-practice positioning paper
5 <b>Assemble panel of industry experts</b>	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> <li>• Share findings</li> <li>• Strengthen cases for candidate eligibility</li> <li>• Prioritize candidates</li> </ul>	Refined list of prioritized Award candidates
6 <b>Conduct global industry review</b>	Build consensus on Award candidates' eligibility	<ul style="list-style-type: none"> <li>• Hold global team meeting to review all candidates</li> <li>• Pressure-test fit with criteria</li> <li>• Confirm inclusion of all eligible candidates</li> </ul>	Final list of eligible Award candidates, representing success stories worldwide
7 <b>Perform quality check</b>	Develop official Award consideration materials	<ul style="list-style-type: none"> <li>• Perform final performance benchmarking activities</li> <li>• Write nominations</li> <li>• Perform quality review</li> </ul>	High-quality, accurate, and creative presentation of nominees' successes
8 <b>Reconnect with panel of industry experts</b>	Finalize the selection of the best-practice Award recipient	<ul style="list-style-type: none"> <li>• Review analysis with panel</li> <li>• Build consensus</li> <li>• Select recipient</li> </ul>	Decision on which company performs best against all best-practice criteria
9 <b>Communicate recognition</b>	Inform Award recipient of Award recognition	<ul style="list-style-type: none"> <li>• Present Award to the CEO</li> <li>• Inspire the organization for continued success</li> <li>• Celebrate the recipient's performance</li> </ul>	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10 <b>Take strategic action</b>	Upon licensing, company is able to share Award news with stakeholders and customers	<ul style="list-style-type: none"> <li>• Coordinate media outreach</li> <li>• Design a marketing plan</li> <li>• Assess Award's role in future strategic planning</li> </ul>	Widespread awareness of recipient's Award status among investors, media personnel, and employees

## The Intersection between 360-Degree Research and Best Practices Awards

### *Research Methodology*

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

### 360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



## About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.