

# 2007 Credit Union Multi-Factor Authentication Support Study

**A report on the changes in support requirements and online banking activities at U.S. NCUA-regulated credit unions resulting from the adoption of multi-factor authentication (MFA) or other authentication products or services.**

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## **Abstract**

*We measure the change in administrative support costs and online member activity resulting from the adoption of multi-factor authentication (MFA) or other authentication products or services by NCUA-regulated credit unions.*

*The study quantifies the support costs associated with different authentication approaches and measures the loss of online members resulting from the deployment of these approaches.*

## **Survey Method**

*This study surveyed a statistically random sampling of U.S. credit unions who had implemented MFA or other authentication products or services.*

*Respondents were invited to participate in the survey via an invitation facilitated by the Credit Union Journal. Respondents visited an internet-hosted webpage at ComplianceScore.com where they were asked three multiple-choice questions:*

- 1) What type of multi-factor authentication (MFA) approach did your organization implement?*
- 2) How did your MFA choice affect your on-going support requirements/costs? and*
- 3) How did your MFA choice affect your online customer activity?*

*Respondents selected their answers from a list of choices in the format 1% to 5%, 6% to 10%, etc. Ad-hoc or explanatory responses were not permitted. Respondents did not identify themselves.*

*Responses were correlated within each type of authentication and an average score for each type of authentication was then calculated to within 2 decimal places using a numeric scoring system. Scores ranged from 0.00 to 6.00, with 0.00 representing no increase in support costs / no reduction in online member activity, and 6.00 representing the greatest increase in support costs / the greatest reduction in online member activity.*

*Scores were calculated separately for support costs and activity loss. From these scores, an average percentage was derived.*

## **Score Legend**

<b>5.01 to 6.00</b> <b>Unacceptably High Support Costs / Reduction in Activity</b>
<b>4.01 to 5.00</b> <b>Extremely High Support Costs / Reduction in Activity</b>
<b>3.01 to 4.00</b> <b>Very High Support Costs / Reduction in Activity</b>
<b>2.01 to 3.00</b> <b>High Support Costs / Reduction in Activity</b>
<b>1.01 to 2.00</b> <b>Moderate Support Costs / Reduction in Activity</b>
<b>0.01 to 1.00</b> <b>Low Support Costs / Reduction in Activity</b>
<b>0.00 to 0.00</b> <b>No increase in Support Costs / Reduction in Activity</b>

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## 1. Findings: Calculated Scores

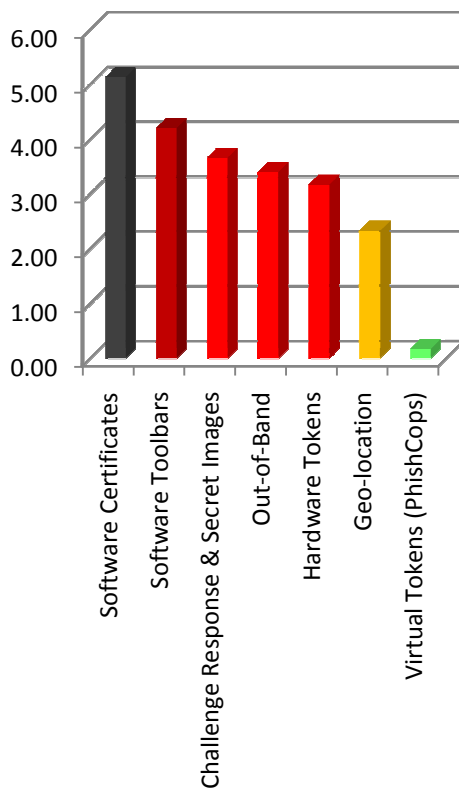
### Support Cost Increase: Calculated Scores

Software Certificates:	<b>5.13</b>
Software Toolbars:	<b>4.20</b>
Challenge/Response & Secret Images:	<b>3.66</b>
Out-of-Band	<b>3.40</b>
Hardware Tokens:	<b>3.17</b>
Geo-location:	<b>2.33</b>
Virtual Tokens (PhishCops®):	<b>0.17</b>

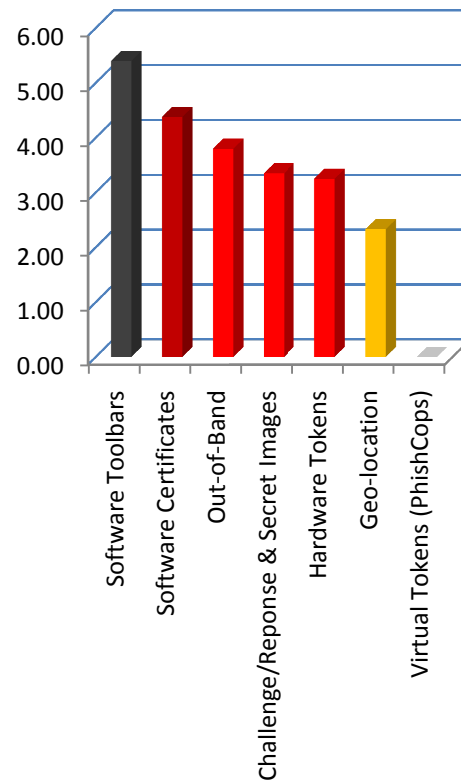
### Activity Decrease: Calculated Scores

Software Toolbars:	<b>5.40</b>
Software Certificates:	<b>4.38</b>
Out-of-Band:	<b>3.80</b>
Challenge/Response & Secret Images:	<b>3.35</b>
Hardware Tokens	<b>3.25</b>
Geo-Location	<b>2.33</b>
Virtual Tokens (PhishCops®):	<b>0.00</b>

**Increase in Support Costs**



**Decrease in Online Activity**



**Legend:**

5.01 to 6.00	Unacceptably High Support Costs / Reduction in Activity
4.01 to 5.00	Extremely High Support Costs / Reduction in Activity
3.01 to 4.00	Very High Support Costs / Reduction in Activity
2.01 to 3.00	High Support Costs / Reduction in Activity
1.01 to 2.00	Moderate Support Costs / Reduction in Activity
0.01 to 1.00	Low Support Costs / Reduction in Activity
0.00 to 0.00	No increase in Support Costs / Reduction in Activity

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## 2. Findings: Percentages

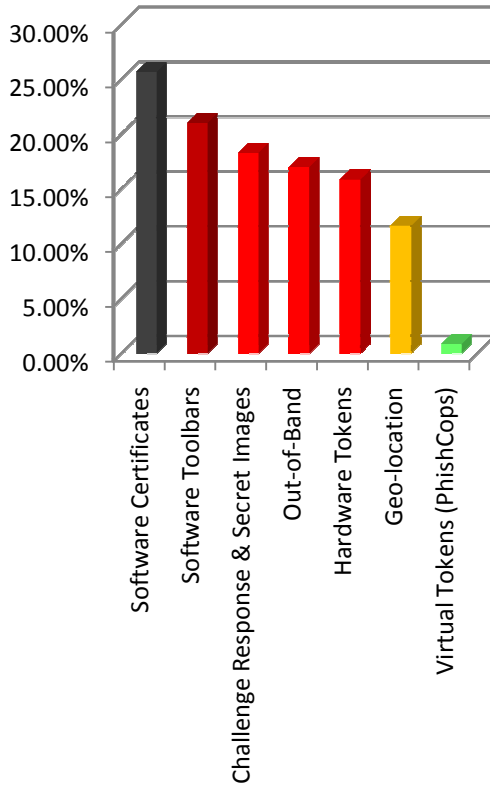
### Support Cost Increase: Calculated %

Software Certificates:	<b>25.65%</b>
Software Toolbars:	<b>21.00%</b>
Challenge/Response & Secret Images:	<b>18.30%</b>
Out-of-Band	<b>17.00%</b>
Hardware Tokens:	<b>15.85%</b>
Geo-location:	<b>11.65%</b>
Virtual Tokens (PhishCops®):	<b>00.85%</b>

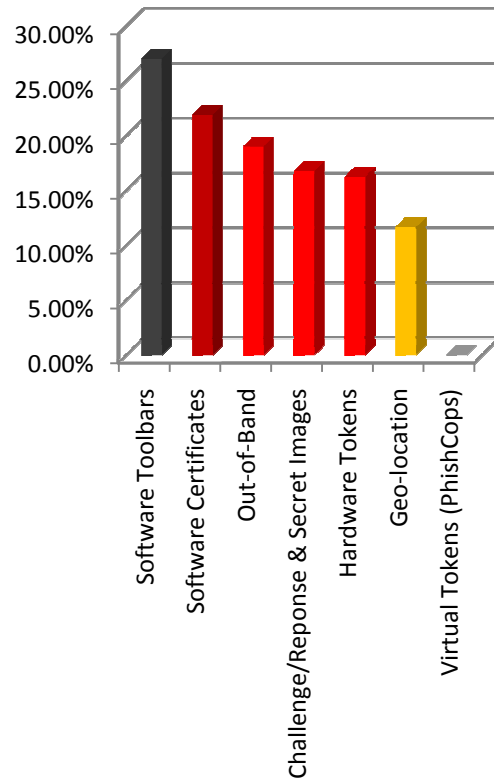
### Activity Decrease: Calculated %

Software Toolbars:	<b>27.00%</b>
Software Certificates:	<b>21.88%</b>
Out-of-Band:	<b>19.00%</b>
Challenge/Response & Secret Images:	<b>16.77%</b>
Hardware Tokens:	<b>16.25%</b>
Geo-location:	<b>11.67%</b>
Virtual Tokens (PhishCops®):	<b>00.00%</b>

**Increase in Support Costs**



**Decrease in Online Activity**



**Legend:**

>26%	Unacceptably High Support Costs / Reduction in Activity
21% to 25%	Extremely High Support Costs / Reduction in Activity
16% to 20%	Very High Support Costs / Reduction in Activity
11% to 15%	High Support Costs / Reduction in Activity
6% to 10%	Moderate Support Costs / Reduction in Activity
1% to 5%	Low Support Costs / Reduction in Activity
0%	No increase in Support Costs / Reduction in Activity

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### 3. Findings: Summary

121 credit unions responded to the study. Given the statistically small data sample, the following analysis may not be representative of the credit union industry at large.

#### Worst Solutions:

Credit Unions that implemented Software Certificates or Software Toolbar authentication methods experienced the greatest increase in support costs and the greatest decrease in online member activity. This was followed closely by Challenge/Response & Secret Image approaches.

#### Best Solutions:

Credit Unions that implemented Virtual Tokens (PhishCops®) experienced the smallest increase in support costs (less than 1%) and it was the only method that reported no decrease in online member activity. The next best solution was Geo-location with a reported 11.65% increase in support costs and 11.67% decrease in online activity.

#### Other:

Challenge/Response & Secret Image solutions were the most widely deployed method, however, credit unions that deployed Challenge / Response and Secret Image solutions reported an average increase in support costs of 18.3% and a corresponding average decrease in online member activity of 16.77%

### 4. Collected Data

#	Authentication Type	Increase in Support Costs	Decrease in Online Activity
1	C/R	3	3
2	C/R	4	3
3	C/R	3	4
4	C/R	3	5
5	C/R	4	3
6	C/R	3	4
7	C/R	3	3
8	C/R	4	3
9	C/R	3	3
10	C/R	4	3
11	Hardware Token	3	3
12	Out-of-Band	4	4
13	C/R	3	3
14	C/R	3	3
15	C/R	4	3
16	Hardware Token	3	3
17	C/R	4	3
18	C/R	4	3
19	C/R	5	3
20	C/R	3	4
21	C/R	4	4
22	C/R	3	3
23	Software Certificate	5	4
24	Software Toolbar	4	6
25	Out-of-Band	3	4
26	C/R	4	3
27	Software Certificate	6	4
28	C/R	4	3
29	C/R	4	4
30	C/R	5	3
31	C/R	4	4
32	C/R	3	4
33	C/R	3	5
34	C/R	4	4
35	C/R	3	3
36	C/R	3	3
37	C/R	3	3
38	Software Certificate	4	4
39	C/R	3	4
40	C/R	5	4
41	Software Certificate	5	5
42	C/R	4	3
43	C/R	4	3
44	C/R	4	4
45	C/R	3	3
46	Virtual Token (PhishCops)	1	0
47	C/R	3	3

#	Authentication Type	Increase in Support Costs	Decrease in Online Activity
48	Hardware Token	3	3
49	C/R	4	4
50	Out-of-Band	4	4
51	C/R	5	3
52	C/R	3	2
53	Software Toolbar	4	5
54	C/R	3	3
55	Software Certificate	5	4
56	C/R	4	3
57	C/R	3	4
58	C/R	4	5
59	Virtual Token (PhishCops)	0	0
60	Hardware Token	3	4
61	Hardware Token	2	3
62	C/R	3	4
63	C/R	4	3
64	C/R	4	4
65	C/R	4	4
66	C/R	3	3
67	C/R	5	3
68	Software Certificate	5	5
69	C/R	3	3
70	Software Toolbar	4	5
71	Software Certificate	5	5
72	Software Toolbar	5	5
73	Hardware Token	3	3
74	Hardware Token	4	3
75	C/R	4	3
76	C/R	3	4
77	C/R	4	4
78	Virtual Token (PhishCops)	0	0
79	C/R	3	3
80	C/R	4	3
81	C/R	3	3
82	Software Toolbar	4	6
83	Hardware Token	3	3
84	Software Certificate	6	4
85	Hardware Token	3	3
86	C/R	4	4
87	C/R	3	2
88	C/R	5	3
89	C/R	4	3
90	Virtual Token (PhishCops)	0	0
91	C/R	3	4
92	C/R	4	5
93	C/R	4	4
94	C/R	4	3
95	Hardware Token	4	3
96	C/R	4	3

#	Authentication Type	Increase in Support Costs	Decrease in Online Activity
97	C/R	4	3
98	C/R	3	3
99	Out-of-Band	3	3
100	C/R	4	3
101	C/R	3	3
102	C/R	4	4
103	C/R	5	3
104	C/R	3	4
105	C/R	3	3
106	Hardware Token	4	4
107	Hardware Token	3	4
108	C/R	4	3
109	C/R	4	3
110	C/R	3	4
111	C/R	4	3
112	Virtual Token (PhishCops)	0	0
113	C/R	3	3
114	C/R	4	2
115	Geo-location	2	1
116	C/R	5	3
117	Geo-location	3	3
118	Out-of-Band	3	4
119	C/R	3	3
120	Geo-location	2	3
121	Virtual Token (PhishCops)	0	0

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## 5. Study Co-Sponsors:

### Sestus Data Company



Sestus Data Company's Virtual Token™ multi-factor authentication solution (formerly known as PhishCops®) is a true multi-factor authentication approach as recommended by the FDIC and the FFIEC.

Virtual Token™ MFA is extremely easy to deploy. There is no hardware to purchase or ship, no software or active-x objects to install, no java scripting requirements, and no certificates to manage. Virtual Token™ MFA is 100% cross-browser, cross-device compatible.

For its breakthrough in cyber security, the U.S. government has twice named Virtual Token™ MFA a semi-finalist for the U.S. Homeland Security Award.

#### Contact:

Sestus Data Company  
11435 W. Buckeye Rd. Suite 104-508  
Avondale, AZ 85323-6812 US

Tel: (800) 788-1927 ext 1  
Fax (800) 741-9048

Email: [sales@sestus.com](mailto:sales@sestus.com)

#### Websites:

<http://www.sestus.com>

### The Credit Union Journal



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224 Datura Street, Suite 615  
West Palm Beach, FL 33401  
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