



***Two-Factor Authentication –  
The Real Cost of Ownership***

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# **Two-Factor Authentication**

## **– The Real Cost of Ownership**

### **Executive Summary**

When a substantial technology purchase is at hand, companies often make the mistake of focusing an inordinate amount of time, negotiation, and analysis on purchase price. For many security products—particularly two-factor authentication, which has now become a “must have” technology for the enterprise—a more important consideration is Total Cost of Ownership (TCO), where a range of factors are scrutinized to determine the long-term cost of purchasing and maintaining an application. This “Real Cost” of owning a software application might include important criteria that are often overlooked, such as hardware replacement costs, impact on existing IT infrastructure, maintenance and support contracts, and product usability.

Aladdin Knowledge Systems Authentication Solutions provide a clear value proposition for organizations that must protect their remote access environment and user identity. Cost is always a primary consideration for purchasers, but upfront price of the solution is not the single biggest determinant of the true cost of ownership of a solution. Since vendors use different pricing and licensing schemes, total cost of ownership of a solution may differ significantly irrespective of the upfront pricing due to differences in recurring costs such as replenishment of expiring tokens, support, warranties, hardware requirements, and administrative effort needed to deploy and maintain the solution.

Aladdin’s SafeWord provides excellent Total Cost of Ownership and a tangible cost-savings benefit for OTP-based authentication by providing straightforward pricing model and eliminating many of the costs associated with ownership and maintenance of a two-factor authentication solution. This paper aims to educate the IT decision maker about various costs associated with buying and maintaining a token-based OTP two-factor authentication solution and how to calculate the real cost of ownership before making a purchase decision.

### **Defining Total Cost of Ownership**

There are many factors involved with purchasing an OTP two-factor authentication, including the initial pricing and licensing model, token warranty, infrastructure and hardware requirements, and effort and resources required for deploying and managing the solution. Total cost incurred in purchasing and maintaining a two-factor authentication solution will vary substantially among vendors. Vendors may have distinct licensing models, so some of the costs highlighted below may not be applicable to all vendors. Nonetheless, these guidelines provide a measurable benchmark and offer key questions to ask of a vendor before making a decision on a solution.

## Summary of Key TCO Criteria

<b>Upfront purchase costs</b>	Includes costs of purchasing tokens, software licenses, and first year of support. About 1/3 of the TCO can be attributed to purchase cost for most solutions.
<b>Support costs and warranty</b>	Includes cost of maintaining a support agreement for software and warranty on the tokens. This is typically 20 to 30% of the upfront purchase costs per year.
<b>Token replacement costs</b>	In many licensing models, tokens must be replaced. <ol style="list-style-type: none"><li>1. Token expiration – RSA sells tokens for a predetermined limited lifetime (usually 3 years) and replacement is necessary at expiration</li><li>2. Token malfunction due to token quality, dead battery, or token mishandling</li><li>3. Lost tokens</li></ol>
<b>Server purchase and maintenance</b>	Cost of server hardware and software to run the authentication server software. Total cost includes administration required to maintain the server.
<b>Shelf decay</b>	Useful token life diminishes over time due to stocking at the reseller or customer. Tokens with fixed expiration dates are likely to lose about 6 months of useful life due to shelf decay.
<b>Administration and deployment</b>	Includes the following <ol style="list-style-type: none"><li>1. Initial setup costs</li><li>2. Professional services costs</li><li>3. Account creation and token distribution</li><li>4. Cost of keeping tokens synchronized with the server</li><li>5. Ongoing costs of adding/deleting users</li></ol>

### Upfront Purchase Cost

Upfront purchase costs, though they might be a reasonably large portion of TCO, are not alone a good indicator of long term cost of ownership. For most two-factor authentication solutions available on the market, the initial cost of the solution ranges from about 33% of the total cost to as low as only 10%.

Upfront purchase costs typically include the cost of tokens (hardware or software), cost of server licenses, and cost of the first year support. Vendors use different pricing models ranging from a bundling of all three costs into one price to separately charging for one or more of the above items. Some vendors even charge a fixed license fee for the server, which may result in very high acquisition cost if your user count is not large enough to justify the server cost. A low token price alone does not necessarily translate into a low overall cost, given the range of other upfront costs associated with a purchase.

### Support Costs and Warranty

Annual support and maintenance of a two-factor authentication solution provides for technical support services, product enhancements, incremental upgrades, and software patches. A warranty on the hardware token itself can be another critical component. A token warranty is an important consideration for a purchase and length of warranty can be an indicator of the quality of the tokens. A longer warranty period is preferable since it is typically after a few years of use that tokens will start to malfunction and batteries will start to run out. Longer warranty periods mitigate the need to buy replacement tokens.

## ***Token Replacement Costs***

Token replacement can account for as much as 40% of the total cost of ownership of a solution. Put simply, RSA's business model dictates that customers must replace their installed base of tokens ever three years (on average), much to the detriment of its own customer base. This additional token replacement cost can be high in terms of token and license price, but additional costs are associated with re-deploying those new tokens to the entire user base. And since a token may need to be replaced several times over the course of the installation lifetime, replacement costs can skyrocket to as much as 50% of TCO.

## ***Server Purchase and Maintenance***

Typically, server hardware and operating systems are required to run the server component of two factor authentication solution. In addition to the cost of purchasing the server you also need to account for maintenance costs since a server will require frequent patching and upgrades. Some vendors sell authentication appliances that already have a server component, which in the end require the same support costs as a separate server.

## ***Shelf Decay***

Shelf decay is loss of useful token life due to stocking the token at the customer or reseller site before tokens are actually deployed to end users. Tokens that have an expiration date (like RSA) are particularly vulnerable to shelf decay. End users may lose as much as 6 months of usage from a token if they do not receive it right away. The clock is ticking at the moment of sale, and often companies do not deploy all of their tokens at once. A token deployed six months after purchase will still expire at the three-year mark.

## ***Administration and Deployment Costs***

Deployment and maintenance costs comprise of the following:

1. Initial setup costs – These are the costs of building the server, loading authentication software on it, integrating with user directory and testing a handful of user accounts. For some solutions, this can take up to three days just to get started. Since SafeWord does not require a separate server for deployment and plugs directly into Active Directory, most users describe that it is a 20 minute activity for them to deploy and test it on Windows based systems.
2. Professional services costs – Due to the complexity of deployment, several solutions in the market require involvement of the vendor's professional services for full deployment. Typical engagement can run well into \$5-10 thousand range for a deployment of 1000 tokens.
3. Account creation and token distribution – This can be the largest management activity associated with deployment. Moving thousands of user accounts into the new authentication server can be time consuming and may take several man weeks to accomplish.
4. Help desk and support – Another hidden cost is internal support. Analysts estimate that help desk calls can cost between \$25 and \$35 per call. Each time an end user has to call the help desk to re-synch tokens, or inquire about the timing mechanism or clock, the company incurs support costs. An easy-to-use solution that does not require re-sync can cut down on needed help desk calls significantly.

## Comparison of SafeWord and RSA Pricing and TCO Structure

	RSA SecurID	SafeWord
Upfront purchase costs	Separate price for: <ul style="list-style-type: none"> <li>• Tokens</li> <li>• Server (Base or Enterprise)</li> <li>• First year support (Standard or extended)</li> </ul>	Bundled pricing
Maintenance and support costs	Annual	Annual
Server purchase and maintenance	Requires purchase and maintenance of a separate server or appliance	Typically deployed on existing Windows domain controllers
Token replacement costs	Token replacement is required every 2-5 years	Tokens come with lifetime warranty. No replacement required
Shelf decay	Always	Rarely
Administration and deployment	High	Low

## TCO Comparison of SafeWord and RSA SecurID

SafeWord offers a comparable Total Cost of Ownership that is far better than RSA's offering. The following side-by-side comparison highlights the costs of a 1000-user deployment for a period of seven years. Assumptions are as follows:

RSA Assumption – RSA SecurID SD-700 token with three year expiration, their most common time period. An enterprise license with extended support will be used for cost comparison.

SafeWord Assumptions – SafeWord 2008 with Alpine token is used for cost comparison.

### *Upfront Purchase Costs*

SafeWord 2008 offers a bundled package that provides token, licenses, and first year of support in a single price. RSA offers each of these components separately. These represent only the upfront costs, which are in most cases comparable. Total costs, however, drop considerably when other TCO variables enter the comparison.

#### **1000 Users**

	SafeWord 2008	RSA SecurID
Token price	109,000 (bundle)	60,000
Software price	0	54,000
First year support	0	14,000
Total	109,000	128,000

## Token Replacement Costs

Much to the chagrin of their customers, RSA Security uses a sales model that requires a regular replacement of tokens and licenses, which can make the Total Cost of Ownership particularly high. The following chart depicts the breakdown of key components of TCO for RSA's SecurID solution. As indicated below, startup costs for the two-factor authentication solution only make up about 23% of the total costs over time. There are other significant expenses that need to be considered before making the right choice of authentication vendor.

These numbers represent objective comparisons, but anecdotal information is also useful. A key complaint from RSA customers is this "expiring token" model and is a primary reason those customers come to Aladdin for a proven, more cost-conscious alternative.

	SafeWord 2008	RSA SecurID
Token price	0	60,000
Number of replacement cycles	0	2
Total	0	120,000

*Token replacement costs for SafeWord 2008 vs. RSA SecurID*

## SafeWord 2008 Tokens Never Expire and Come with a Lifetime Warranty

It is important to note that SafeWord not only offers tokens that never expire, but also come with a lifetime token warranty. SafeWord eliminates the need to replace and deploy new tokens every three years and helps reduce the cost of ownership. SafeWord tokens are built to last for as much as 8 years, with battery life far longer than competing tokens.

And now with SafeWord 2008, all newly purchased tokens come with a lifetime token warranty. Customers can simply return tokens for any reason to Aladdin for a free replacement, whether the battery dies or the token gets damaged.

In the TCO analysis, eliminating the token replacement cost can result in a savings of as much as 45% in total cost. That is a tremendous savings that offers a compelling value for customers.

## Maintenance and Support Costs

Support agreements typically include customer technical support, software updates, and warranty on tokens. SafeWord 2008 comes with 24x7 phone support provided by Aladdin's support team.

Length of token warranty is one of the most important factors. SafeWord provides a lifetime token warranty that is included in the support contact for all SafeWord 2008 tokens—a compelling benefit for any customer considering total costs over time. RSA SecurID tokens can only be replaced in cases of defect or failure.

	SafeWord 2008	RSA SecurID
Per year cost	21,800	12,253
Total cost for 7 years	130,800	73,518

*7 year maintenance costs of SafeWord 2008 vs. RSA SecurID*

## Server Purchase and Maintenance

SafeWord two-factor authentication can be deployed on existing hardware. As SafeWord has been designed for the Windows platform (but runs equally well with Solaris), it can be installed in minutes right on the existing Active Directory Domain Controller. No additional hardware is necessary, although there are scenarios where a separate server may be desired. Running the SafeWord software on existing hardware cuts down on hardware acquisition costs and also makes maintenance a far easier task. Moreover, SafeWord leverages your existing Microsoft Management Console interface within Active Directory, allowing administrators to leverage the tools and know-how they are already used to.

A comparison versus solutions such as RSA SecurID shows a cost savings of at least \$5000 (2 Windows servers at \$2500 each) in server/appliance hardware itself if more than one server is to be deployed to provide redundancy. Additionally, management effort savings in server maintenance and patching of the server can be counted towards SafeWord cost savings.

	SafeWord 2008	RSA SecurID
Server price	0	5,000
Support and management	Included in support contract	Additional costs not measured
Total	0	5,000

*Server purchase and maintenance costs for SafeWord 2008 vs. RSA SecurID*

## Shelf Decay

Shelf decay is the result of stocking RSA SecurID tokens prior to deployment to the users. Enterprises typically order more tokens at a time than can be deployed immediately. A number of tokens remain un-deployed for a long period of time and thus lose useful life. This is a cost that is typically ignored in TCO comparisons but should be accounted for. In our calculations we assume an average shelf decay of 6 months for 20% of tokens deployed. Six months less usage is 1/6 of the total life of an RSA token.

For 1000 tokens this cost is  $(1000 \times 20\% \times 60) \div 6 = \$2000$  per three year period. Therefore for a seven year period a customer will typically incur a cost of  $2000 \times 3 = \$6000$ .

## Administration and Deployment Costs

SafeWord integration with Microsoft Active Directory makes it possible to automatically create token accounts for the users without requiring administrator effort. Furthermore, the user self registration feature makes the large roll outs simple and administration free. And because SafeWord tokens do not need to be re-deployed every three years, account creation and management over time is far lower. In this comparison, RSA account and token deployment cycles happen three times as often.

Token Synchronization costs – Resynchronization Incidents are a very common problem. We assume that a help desk person (at a low loaded cost) of \$25 per hour handles 1call per year, per token (and fixes the problem in 15 minutes.) Several customers have reported help desk costs at a significantly higher total.

	SafeWord 2008	RSA SecurID
Initial setup costs	3,500	3,500
Professional services costs	Optional (0)	Optional (0)
Account creation and token distribution	12,500	12,500 x 3 = 37,500 (tokens are redistributed after expiry)
Token synchronization costs	0	1000 tokens x 7 years x 25 x 15 ÷ 60 (4 calls per hour) = 43,750
<b>Total</b>	<b>16000</b>	<b>84750</b>

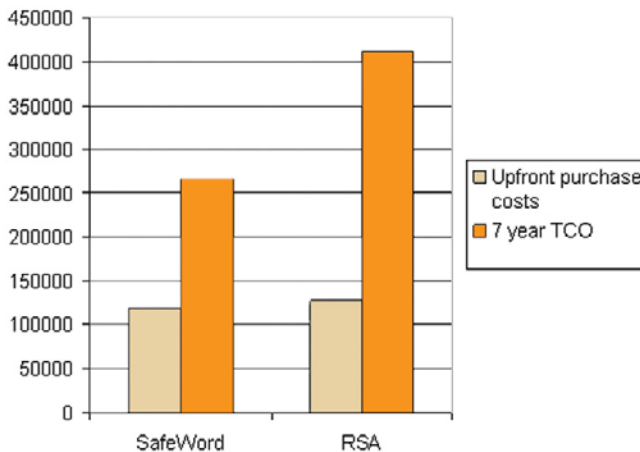
*Upfront costs of purchasing SafeWord 2008 vs. RSA SecurID*

Bottom line: SafeWord was built for ease-of-installation and ease-of-use. The software installs in most cases within 20-30 minutes, and it integrates seamlessly with your existing instance of Active Directory. The Aladdin technical support team tells us about the low number of support calls they actually receive from SafeWord customers, which we see as a tremendous customer benefit.

## TCO Comparison Score Card

	SafeWord 2008	RSA SecurID
Upfront purchase costs	109,000	128,000
Maintenance and support costs	130,800	73,518
Server purchase and maintenance	0	5,000
Token replacement costs	0	120,000
Shelf decay	0	4,000
Administration and deployment	16,000	84,750
<b>Total</b>	<b>255,800</b>	<b>415,268</b>

**TCO comparison of SafeWord vs. RSA SecurID**



## Conclusion

One Time Password two-factor authentication solutions hold great value in terms of securing remote access and compliance, but solutions like SafeWord can also be a cost-saving tool in the long term.

Properly evaluating Total Cost of Ownership is essential when investigating these important solutions, whether that includes additional hardware costs, support and deployment costs, or the enormous costs associated with replacing expiring tokens. SafeWord was designed with TCO in mind: Easy-to-use solution that installs quickly, tokens that never expire and come with a lifetime warranty, and easy integration with your existing infrastructure.

## About Aladdin

Aladdin Knowledge Systems (NASDAQ: ALDN) is an information security leader with offices in 15 countries, a worldwide network of channel partners, and numerous awards for innovation. Aladdin eToken is the world's #1 USB-based authentication solution, offering identity and access management tools that protect sensitive data. Aladdin SafeWord OTP-based two-factor authentication technology protects companies' important information assets and applications.

Aladdin HASP SRM boosts growth for software developers and publishers through strong anti-piracy protection, IP protection, and secure licensing and product activation. Aladdin eSafe delivers real-time intelligent Web gateway security that helps protect data and networks, improves productivity, and enables compliance. To learn more, visit [www.Aladdin.com](http://www.Aladdin.com).

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