



**Report  
for  
Fortium Technologies Ltd**

**Security Assessment of  
Patronus DVD Copy Control  
Software**

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### Document Distribution List

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### Using This Report

For ease of information dissemination within your organisation, NGS have divided this document into four clearly marked and separable sections.

### Document Breakdown

Section 1	Management Overview
Section 2	Technical Findings
Section 3	Supplemental Data
Section 4	Appendices

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# 1 Management Overview

Next Generation Security Consulting (NGS) are pleased to present the findings of the security assessment conducted on behalf of Fortium.

NGS were requested to perform an assessment of Fortium Patronus DVD Copy Control Software and CD Copy Control Software to assist Fortium in ensuring that the copy protection mechanisms which they have produced do not insert software onto an operating system, or take any malicious action on a system to which they are introduced.

## 1.1 Scope of Engagement

NGS were contracted by Fortium to conduct a security assessment of the Patronus DVD Copy Control Software, which is a proprietary DVD and Audio protection technology which allows a DVD or CD vendor to introduce anti-copying functionality into their existing DVD or Audio releases.

NGS's role in the assessment was as follows: NGS were to determine conclusively whether the technology created by Fortium would take any unexpected, undesirable or malicious actions when a DVD protected with the technology is played on any of the three operating system platforms supported by Fortium (Windows, Intel Mac, PowerPc Mac).

For the purpose of the assessment, NGS were presented with six DVD videos, three of which contained material that had been protected using the Patronus DVD Copy Control Software, and three of which had not. In addition to this, NGS were also presented with two Audio CDs which had been protected with Fortium's audio copy control software.

The behaviour which NGS had been told to expect is as follows: The DVDs which are not protected with Patronus DVD Copy Control Software were to play as usual; the DVDs which were protected with Patronus DVD Copy Control Software appear to play exactly as those which were not protected – i.e., there should be no noticeable difference; and the Audio CDs should not even register when put into a computer – i.e., the device should be inaccessible.

As these expected behaviours were well defined, NGS's remit was to consider and give further assessment to anything falling outside of these expectations. Of particular concern to Fortium was the requirement to receive independent confirmation that the Copy Control Software did not to install, modify, or configure the system onto which the content is being played (e.g., installing software, modifying configurations for anything on the system, etc).

## 1.2 Methodology Overview

For the purpose of this engagement, the methodology was fairly simple, involving the following key phases:

For each operating system under assessment:

1. Play the unprotected DVD content
2. Observe the interactions taken by the system from an operating system perspective (files read/written, files modified, applications started, registry modifications)
3. Remove the unprotected DVD, and insert the protected DVD
4. Observe the interactions taken by the system from an operating system perspective
5. Compare the results, noting any anomalies, and further investigating any which may occur

### 1.3 Summary of Findings

This section of the report details the key findings of the NGS security assessment conducted on behalf of Fortium. Section 2 contains in-depth technical findings with associated levels of severity and remediation requirements. The key findings of this report can be distilled to the following:

- There were no findings during this assessment

### 1.4 Further Information

This report contains a number of sections designed to ensure that your organisation can maximise the security information that was discovered during the assessment.

Section 2 contains the tools utilised during the assessment and further information about NGS.

### 1.5 Conclusions and Recommendations

Having completed the security assessment of the Patronus DVD Copy Control Software and Fortium's CD audio Copy Control software, NGS conclude that there are, in both the case of the protected DVDs and Audio CDs, no unexpected, undesirable, or malicious actions taken on the system upon which such a DVD or CD is used.

The review of the protected DVDs, versus the unprotected DVDs just showed a difference in the format and distribution of the DVD content between the two disks, and that there was no software or data which could be interpreted in a malicious way by a system reading the protected DVD.

The protected Audio CDs behaved exactly as Fortium documented them to – reporting the device to be inaccessible when played on a computer. The fact that the device was inaccessible meant that data could not be read from the CD, and as such it was not possible for this to harbour any malicious code.

This behaviour was found to be consistent across all the platforms which NGS tested: Windows XP, MacOS 10 (on both an Intel MacBook, and a PowerPc).

NGS therefore conclude that both the DVD and Audio CD protection technologies behave in a safe and secure manner when introduced to a user's computer system, and that they behave as described by Fortium.

## 2 Appendices

### 2.1 About NGS

NGS is the world leader in the discovery and publication of computer security vulnerabilities, and in this capacity work as advisers to CESG, the UK Government's National Technical Authority for Information Assurance. Mark and David Litchfield, co-founders, are the world's leading vulnerability researchers; this was recently recognised by Information Security Magazine who named them as "best in the world".

Apart from research, NGS is a leader in the delivery of sophisticated security software and expert consulting services backed by several internationally renowned security researchers. The security software solutions provided by NGS deliver a cost effective means to identify and mitigate risks posed by the increasingly complex security threats faced by all organizations. The software suite includes a range of database scanners and the award-winning Typhon III, which can all be deployed to assist in securing corporate infrastructures and critical information assets against attack.

The NGS software suite has been developed to enable organisations that wish to proactively defend against a variety of digital risks to do so with confidence. With a proven record of computer security software and an exemplary consultancy service, NGS have come to the fore and earned the recognition as world leaders within application vulnerability research.

NGS consultancy services are the preferred provider for many of the world's leading businesses; these services include comprehensive assessments and in-depth penetration testing of infrastructures and applications. This practical knowledge is built into all the applications developed by NGS, ensuring that our clients are protected from current and emerging threats, including those that have yet to be announced in the public domain.

### 2.2 About NISR

The NGS Insight Security Research Team (NISR) are global leaders in the field of application vulnerability research. Members of NISR regularly lecture on emerging security vulnerabilities to numerous organisations including: The US Department of Defence Information Assurance Directorate, and CESG (GCHQ). NISR team members are also regular invited speakers at Black Hat security briefings, UNCON, and the NCN security conferences.