



REDWALL
TECHNOLOGIES

Company Overview

July 2020

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Security Threats

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Security: a huge problem and growing

The rate of **evolution** and **volume** of **complex targeted threats** continue to increase.

The **growing prevalence** of **mobile, cloud, hybrid WANs, direct Internet access, and IoT** is only going to exacerbate this problem.

Existing **security end-point solutions and applications** are often reactive, inconsistent, and ineffective.

The **consequences of not proactively preparing for a targeted attack** are enormous.



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By 2021, global annual
cybercrime costs will grow to

\$6 trillion

which includes damage and destruction of data, stolen money, lost productivity, theft of intellectual property, theft of personal and financial data, embezzlement, fraud, post-attack disruption to the normal course of business, forensic investigation, restoration and deletion of hacked data and systems, and reputational harm

Source: Cybersecurity Ventures

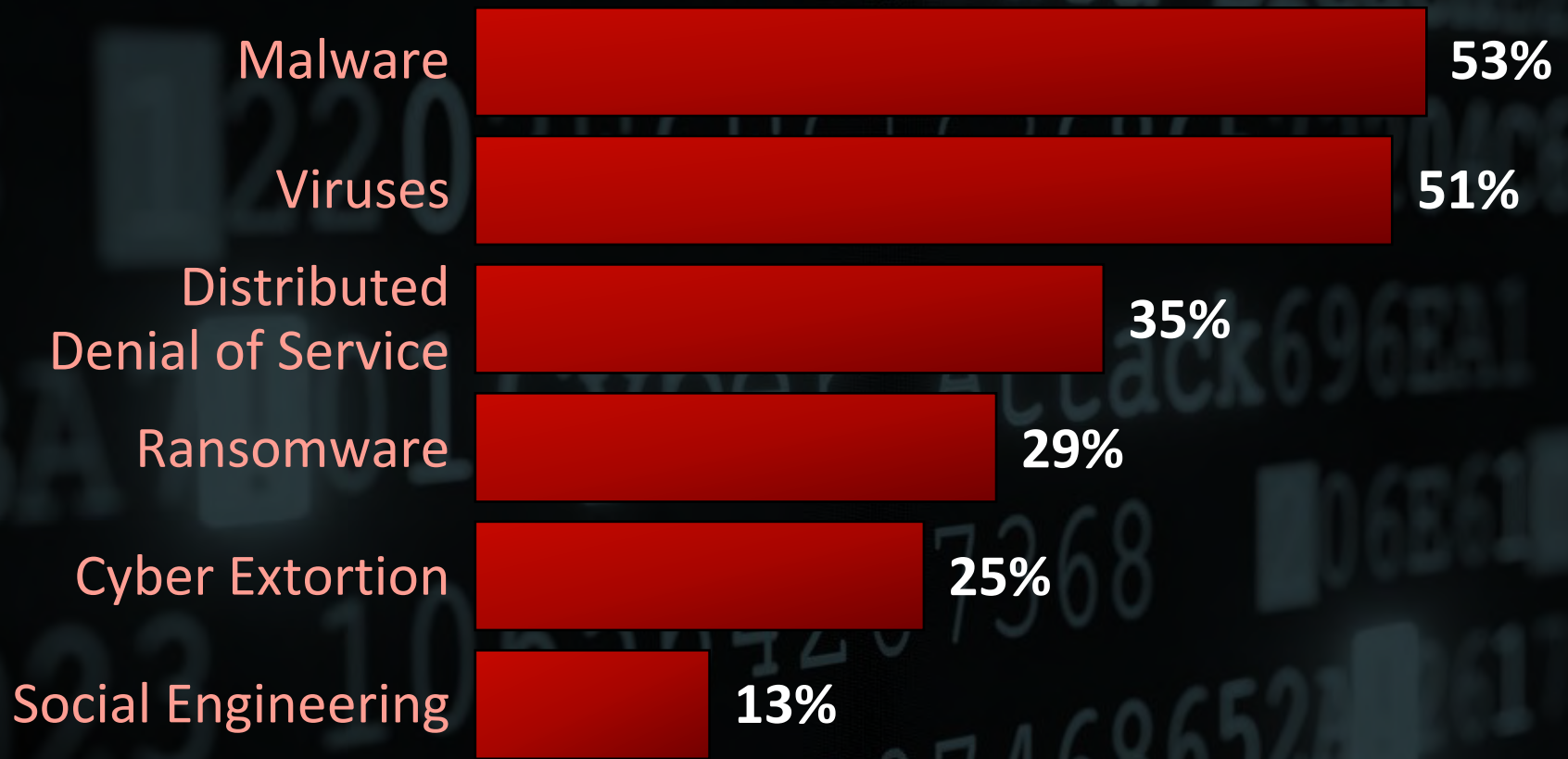
Global spending
on cybersecurity products and
services is projected to exceed

\$1 trillion

cumulatively over the period
from 2017 to 2021

Source: Cybersecurity Ventures

What are the causes of a cyber attack?



Source: Study conducted by Zogby Analytics and sponsored by Hartford Steam Boiler

Smartphone Security Whac-a-mole?

ANDROID



“On Thursday, September 26, 2019 Apple released security updates for iOS, watchOS, and three macOS versions, and over the past week Apple also fixed security flaws in iPadOS, Safari for Mac, Xcode, and tvOS. Apple finally provided security notes today for all of these updates...”

“October 1, 2019 Apple iOS 13.1.2 has landed. It is the third fast-tracked iOS 13 upgrade in under two weeks as Apple desperately plays Whac-a-mole with its botched iOS 13 launch. If you’re unfortunate enough to be running iOS 13, you need this. But everyone else should steer clear because it’s another flawed release.”

“October 16, 2019 Apple iOS 13.1.3 has arrived (as predicted) and iOS 13 now has its fourth fast-tracked iOS 13 upgrade in under a month as Apple continues to play **Whac-a-mole** with a multitude of iOS 13 launch problems.”

Credit Forbes



iOS



The multiple (bring your own) device problem

We use multiple devices because we have **multiple missions** throughout the day and we switch from **role to role**.

Not all those devices have the same security posture. Hence one device may be used to compromise another!

How do we get the user down to the **fewest number** of devices, and **increase security** on that device?





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We secure devices ranging from smartphones to smart-meters so they are **safe from hackers** to a degree that was previously thought to be impossible. And we ought to know — we used to be the hackers.

Redwall's unique, patented solution

Our security monitor trivially **detects and stops** all types of malware attacks.

Redwall's embedded security is applicable to **mobile devices, Internet of Things, connected cars, industrial nodes in critical national infrastructure, and multiple other areas**



Redwall stopped the Stagefright attack while Google, Samsung, LG and others needed to issue security updates, even the SilentCircle Blackphone required patches



Redwall was not affected by the Towelroot exploit used to crack Samsung KNOX



Redwall stopped the Kingroot exploit, a particularly effective Android exploit developed in China

Current status: fielded and tested



US DoD and other operational groups have tested and are leading current efforts to deploy Redwall Mobile® security solutions

Fielded, tested and deployed out of the box by Motorola Solutions in their NIAP-approved mission-critical handsets; Deployed on body-camera IoT device; LG V20 with a Redwall-specific bootloader; and several other mobile devices, including Sony's Xperia smartphone

Multiple patents and Provisionals filed with three already issued: US Patents 9,298,917 9,514,300 and 9,990,505.

Major markets and targeted verticals

MOBILITY

Smart Phones and Tablets

Federal

*Department of Defense
Law Enforcement
First Responders*

Enterprise

*Financial Institutions
Medical – HIPPA*

Consumer

ENTERPRISE PROTECTION

Intellectual Property

INTERNET OF THINGS (IoT)

Medical Devices

*Pace Makers • Insulin, morphine pumps
Defibrillators • Home Health Care
Hospital Care – each bed has on average
10-15 connected devices*

Automotive

*Electronic Control Unit (ECU) –
current computer systems
Remote Engine starters • Cruise Control
Infotainment Systems • Theft Devices • Door Locks*

Consumer

*Home entertainment systems
Wearables
Appliances
Baby monitors*

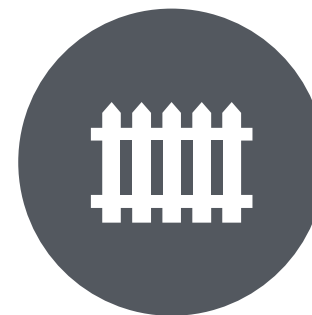
Redwall's Sustainable Advantages



Security monitor
capability
that applies to
every market
on all devices



Detects and stops
suspicious or
different behavior



Partitions data
so that sensitive
and role-based
information is
separate and
secure

Why Redwall?

Deployed, fielded, and well-proven product – no slide-ware or buzzwords here – we're a real company with real opportunities

A product with federal government street credibility that is so novel that it's **garnering the attention of the those with the highest security needs**

A team unlike any other – with a mix of **business acumen, entrepreneurial experience, and offensive cyber**

We know how the bad guys work, and **so we know how to stop them**



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Unique Solution

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Redwall Mobile® A unique, patented solution

One-of-a-kind patented* technology, **continually and proactively scans device** looking for and blocking threats

Competitors are just repeating same old defense technologies, **reacting after a breach** has occurred

If a device has malware on it and our technology is added, **Redwall will stop the malware**

** US Patents 9,298,917 9,514,300 and 9,990,505*

Strongest security solution for mobile devices,
by design and proven

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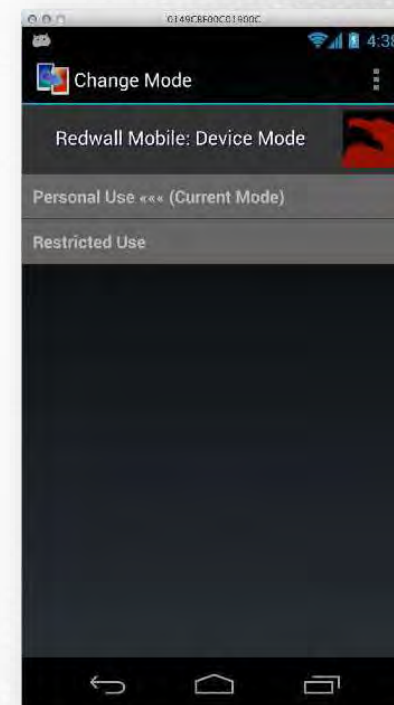
Use Cases

Unrivaled method of multiple modes

Ability to have “multiple devices” on same phone with *Secure Persona*®

Separates **sensitive** from **mundane** and **work** from **personal**

Ability to move these modes **across other devices** . . . phone to tablet to autos to IoT, all secure behind Redwall



Our technology turns **one phone**
into **many secure devices**

Securing the Digital Citizen – Secure Persona®

Join the Redwall Secure Persona® Ecosystem

Secure Persona™

Personal

Enterprise

Tactical

Where customers join for life!

We all live increasingly mobile, digital lives. For each life, there are one or more mobile devices. Managing, safeguarding, and carrying them all can be problematic and expensive. Wouldn't it be ideal if ***one device could meet all our digital-life mobility needs***; while maintaining separation, security and privacy between each? ***Introducing Secure Persona®!*** Secure Persona is the only solution that allows multiple digital-lives on one device, without compromising control, security or privacy.

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Security Threats

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Unique Solution

Use Cases

Better than carrying several devices at once

Each with its own apps, policies, features, and capabilities



App install	GPS	Bluetooth	Authentication
Y	N	Y	None
N	Y	N	Passcode
N	Y	Y	PIN

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Redwall Mobile Resilient – beyond security!

Redwall Mobile *Resilient* is the *Digital Bodyguard*™

Under development as an SBIR Phase II program for the US Marine Corps.*

- Provides fight-through-attack capability at the device level
- Provides enhanced data analytics for command-post attack-triage and post-mission forensics
- Provides enhanced cloud based command and control of fielded devices

* \$1.5M US Marine Corps Phase II SBIR Contract M67854-19-C-6517

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Use Case: Digital Airman / Security Forces & FirstNet

Redwall Mobile® – Secure “multiple-persona” capability on a rugged handheld LTE device, *enabling one device to serve as many*

Benefits – Eliminates the need for, costs and risks of multiple mixed-use LTE devices.

- One device serves all user needs at any security level
- Military grade deployment platform avoids outer boxes and overheat risks

Objectives

- Deliver a trusted resilient operating system environment for hand-held devices
- Provide multiple independent security levels on single device without reliance on network connectivity or media removal
- Provide a rugged platform capable of meeting demanding mission conditions

- Office
- Secure
- Tactical
- Personal



Technology Readiness

- Commercially available on Motorola Solutions LEX L11 Rugged LTE Handheld and Body Cameras
- NIAP Certification in Q4 2019
- Tablet Devices available Q1 2020

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Use case: **Enterprise Security**

BRING YOUR OWN DEVICE (BYOD) SECURITY PROBLEM

Control, security and privacy (CSP) are three fundamental tenets of our digital identities (i.e., “personas”) – at work and in our personal lives. Until now; these tenets could only be met by maintaining separate, multiple work and personal mobile devices. Enter the BYOD conflict and compromise. Trying to appease personal and business CSP interests is a never-ending game of “whack-a-mole” – complex, tiring, expensive and unsatisfying...

SOLVING THE BYOD CSP CHALLENGE

Secure Persona® is the only solution that allows multiple digital-lives on one device, without compromising control, security or privacy.



Use case: **First Responder**

MULTIPLE DEVICE SECURITY PROBLEM

First responders carry multiple mobile devices, on-duty and off. These devices are often part of the chain of evidence for cases, yet, if used for personal communications and tasks, the first responders private information could be subpoenaed and used to invalidate testimony and evidence.

SOLVING THE MULTI-DEVICE CHALLENGE

Secure Persona[®] is the only solution that could prove that a police officer was only ever in “on duty” mode during an investigation, and, therefore protect their private “personal” mode data.



Use case: **Military communications**

SECURITY PROBLEM

More than 100 members of the Israel Defense Forces (IDF), the majority of them stationed around the Gaza strip, fell victim to a cyberespionage attack that used malicious Android applications to steal information from their mobile devices.

THE THREAT THAT REDWALL CAN STOP

Hackers can execute on-demand or scheduled commands, allowing them to read text messages, access the contacts list, take pictures and screenshots, eavesdrop at specific times of the day, and record video and audio.



Use case: **Classified communications**

SECURITY PROBLEM

NSA officials advised White House officials against using personal email accounts and cellphones over concerns of espionage by Russia, China, Iran or others. White House officials, however, subsequently used their cellphones and personal emails for work.

THE THREAT THAT REDWALL CAN STOP

Cyber criminals could use sophisticated malware to turn personal gadgets into listening devices, or take photos and videos without the user knowing about it. Foreign spies could also transfer stolen data via Wi-Fi and Bluetooth.



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