

# Electronic Armor<sup>®</sup> Operating System Cyber Resiliency for software layer

As threats against U.S. military systems continue to grow in scope and sophistication, many government programs and large prime contractors recognize the need for significantly stronger security mechanisms to protect mission-critical systems. These systems are increasingly software dependent, making them a desirable target for adversaries to exploit.

## We need cyber-resiliency solutions

These systems also present inherently unique cyber-protection challenges because of their often remote deployments and detachments from managed networks, which makes detection, adaptation and response to evolving cyber threats difficult.

Although commercial information assurance processes and tools can prevent some basic to moderate attacks, they cannot serve as the only layer of defense for mission-critical systems.

Stronger security mechanisms are needed to protect critical technology and ensure systems continue to operate as designed in cyber-contested environments.

To solve this issue, the Raytheon Technologies Electronic Armor Operating System (EA-OS) offers an integral solution for cyber resiliency and technology protection.

## The Electronic Armor solution

EA-OS is a cyber-resiliency solution that prevents reverse engineering and protects confidentiality and integrity of data and applications from attackers who have bypassed traditional information assurance controls and/or gained escalated privileges on a system. The solution assumes root-level attackers are already on your systems.

Among its many features is the hardening of the operating system, providing data at rest and runtime protections, preventing execution of

## KEY CAPABILITIES

- Hardens operating system (capability removal)
- Protects data at rest and runtime
- Prevents execution of untrusted software
- Prevents modification/reverse engineering of applications
- Provides autonomous event detection and response framework



EVERY SIDE OF  
CYBER

```

from django.views.generic import ListView, DetailView
from .models import Post

urlpatterns = [
    url(r'^nameofthepage/$', appname.views.function)

urlpatterns = [
    url(
        r'^
        ListView.as_view(
            =Post.objects.all().order_by('-date')
            list=blog.blog.html
        ),
        url(
            r'^(?P<>+)$', # ?P named group
            DetailView.as_view(
                =Post,
                = blog/post.html
            )
        )
    ]

# pulls all the objects

36

1. Import the include() function: from django.conf.urls import
url, include
2. Add a URL to urlpatterns: url(r'^blog/', include('blog.urls'))

django.conf.urls import url, include
django.views.generic import ListView, DetailView
models Post
urlpatterns = [
    url(r'^nameofthepage/$', appname.views.function)
</script>
<title>Maps powered by Mapbox-gl-js and OpenStreetMap tiles</title>
<meta charSet=UTF-8>
<meta name= viewport content= initial-scale=1, maximum-scale=1, user-scalable=no />
<script src= https://api.tiles.mapbox.com/mapbox-gl-js/v0.8.1/mapbox-gl.js ></script>
<link href= https://api.tiles.mapbox.com/mapbox-gl-js/v0.8.1/mapbox-gl.css rel= stylesheet />
<style>
body { margin:0; padding:0; }
#map { position: absolute; top: 0px; left: 0px; width: 100%; height: 100%; }
position: absolute;
bottom: 0px;
right: 0px;
background: #fff;
background: rgba(255, 255, 255, 0.8);
}
"version": "0.2.0",
"configurations": [
{
"type": "java",
"name": "Debug (Launch)-Main<
"request": "launch",

```

unauthorized applications and preventing modification/introspection of sensitive applications and data. Electronic Armor leverages advanced techniques such as just-in-time decryption, decoys, false paths and active defenses to keep critical applications and data secure and ensure overall mission resiliency.

The Electronic Armor-Operating System does not require access to program source code, allowing for smooth deployment to legacy and new systems. The solution seamlessly integrates into existing security architectures. The collective features of EA-OS are fully tailorable to fulfill the unique requirements of each specific deployment. It has been field deployed since 2009 and supports modern and legacy versions of Microsoft® Windows®, Linux, and VxWorks.

This solution can be procured through Raytheon Technologies' GSA IT Schedule 70 contract #GS-35F-204GA.

### How it works

EA-OS's operation includes offline and runtime elements. Prior to deployment, EA-OS's offline tools are used to fingerprint and tailor EA-OS to the hardware environment, so it actively responds to threats in a way that supports the mission, and to encrypt and package applications, libraries and data for use in the trusted environment.

During runtime, EA-OS is loaded into memory and establishes a trusted execution environment through hardware and environmental checks. Once EA-OS has established that the environment is safe, trusted applications and data are now allowed to be loaded into memory. The system is then continuously monitored and actively defended by EA-OS as the applications are allowed to carry out their mission while thwarting would-be cyberattacks.



## Electronic Armor Operating System

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