



Fortify Extension for Visual Studio

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# Developer Workbook

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Signal Performance Metrics



# Table of Contents

[Executive Summary](#)

[Project Description](#)

[Issue Breakdown by Fortify Categories](#)

[Results Outline](#)

[Description of Key Terminology](#)

[About Fortify Solutions](#)

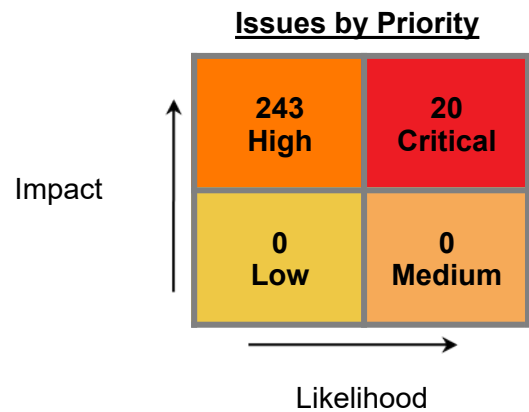


# Executive Summary

This workbook is intended to provide all necessary details and information for a developer to understand and remediate the different issues discovered during the Signal Performance Metrics project audit. The information contained in this workbook is targeted at project managers and developers.

This section provides an overview of the issues uncovered during analysis.

Project Name:	Signal Performance Metri
Project Version:	
SCA:	Results Present
WebInspect:	Results Not Present
WebInspect Agent:	Results Not Present
Other:	Results Not Present



## Project Description

This section provides an overview of the Fortify scan engines used for this project, as well as the project meta-information.

### SCA

<b>Date of Last Analysis:</b>	Apr 11, 2019, 1:17 PM	<b>Engine Version:</b>	18.10.0187
<b>Host Name:</b>	SEDTS-L0G2-2VGK	<b>Certification:</b>	VALID
<b>Number of Files:</b>	1,917	<b>Lines of Code:</b>	71,363



## Issue Breakdown by Fortify Categories

The following table depicts a summary of all issues grouped vertically by Fortify Category. For each category, the total number of issues is shown by Fortify Priority Order, including information about the number of audited issues.

Category	Fortify Priority (audited/total)				Total Issues
	Critical	High	Medium	Low	
ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST	0	0 / 37	0	0	0 / 37
ASP.NET MVC Bad Practices: Model With Optional and Required Properties	0	0 / 32	0	0	0 / 32
ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property	0	0 / 23	0	0	0 / 23
ASP.NET MVC Bad Practices: Optional Submodel With Required Property	0	0 / 41	0	0	0 / 41
Dangerous Function: xp_cmdshell	0 / 1	0	0	0	0 / 1
JSON Injection	0 / 1	0	0	0	0 / 1
Mass Assignment: Insecure Binder Configuration	0	0 / 52	0	0	0 / 52
Open Redirect	0 / 4	0	0	0	0 / 4
Password Management: Hardcoded Password	0 / 2	0 / 2	0	0	0 / 4
Password Management: Password in Configuration File	0	0 / 50	0	0	0 / 50
Path Manipulation	0 / 10	0 / 6	0	0	0 / 16
Privacy Violation	0 / 1	0	0	0	0 / 1
SQL Injection	0 / 1	0	0	0	0 / 1



# Results Outline

## ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST (37 issues)

### Abstract

The controller action may benefit from being restricted to accept only the POST verb.

### Explanation

ASP.NET MVC controller actions that modify data by writing, updating, or deleting could benefit from being restricted to accept the POST verb. This increases the difficulty of cross-site request forgery because accidental clicking of links will not cause the action to execute. The following controller action by default accepts any verb and may be susceptible to cross-site request forgery:

```
public ActionResult UpdateWidget(Model model)
{
    // ... controller logic
}
```

### Recommendation

The following controller action accepts only the POST verb because it has the `[HttpPost]` attribute:

```
[HttpPost]
public ActionResult UpdateWidget(Model model)
{
    // ... controller logic
}
```

This approach does not completely protect against cross-site request forgery; sophisticated attackers can still use scripting-based approaches to circumvent this mechanism. However, using this approach increases the difficulty of an attack with very little cost.

### Issue Summary

### Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST	37	0	0	37
<b>Total</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>37</b>



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 399  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.**Sink Details****Sink:** Function: GetSplitFailMetric**Enclosing Method:** GetSplitFailMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:399**Taint Flags:**

```
396 return PartialView("SplitFailOptions", splitFailOptions);
397 }
398
399 public ActionResult GetSplitFailMetric(SplitFailOptions metricOptions)
400 {
401     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
402     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 34  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Tue Jul 31 2018 12:56:54 GMT-0600 (MDT)  
This does not update any resources. Not a post method.**Sink Details****Sink:** Function: SignalSearch**Enclosing Method:** SignalSearch()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:34**Taint Flags:**

```
31 }
32 }
33
34 public ActionResult SignalSearch(SignalSearchViewModel ssvm)
35 {
```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 34  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High**

```
36 return PartialView("SignalSearch", ssvm);  
37 }
```

**Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 154  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:56:14 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: GetRecordCount  
**Enclosing Method:** GetRecordCount()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs:154  
**Taint Flags:**

```
151 return processedCodes;  
152 }  
153  
154 public ActionResult GetRecordCount(DataExportViewModel dataExportViewModel)  
155 {  
156 if (ModelState.IsValid)  
157 {
```

**Projects/Github/ATSPM/SPM/Controllers/MenusController.cs, line 111 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 13:11:43 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: Delete  
**Enclosing Method:** Delete()  
**File:** Projects/Github/ATSPM/SPM/Controllers/MenusController.cs:111





**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/MenusController.cs, line 111 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Taint Flags:**

```
108
109 // GET: Menus/Delete/5
110 [Authorize(Roles = "Admin")]
111 public ActionResult Delete(int? id)
112 {
113     if (id == null)
114     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 295 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: GetYRAMetricByUrl  
**Enclosing Method:** GetYRAMetricByUrl()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:295  
**Taint Flags:**

```
292 return View("Index", defaultChartsViewModel);
293 }
294
295 public ActionResult GetYRAMetricByUrl(YellowAndRedOptions metricOptions)
296 {
297     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
298     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 51 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 51**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 13:00:13 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: LinkPivotResult**Enclosing Method:** LinkPivotResult()**File:** Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs:51**Taint Flags:**

```
48 return PartialView("FillSignals", signals);
49 }
50
51 public ActionResult LinkPivotResult(MOE.Common.Models.ViewModel.LinkPivotViewModel lpvm)
52 {
53     if (ModelState.IsValid)
54     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 494**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetAoRMetric**Enclosing Method:** GetAoRMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:494**Taint Flags:**

```
491 return PartialView("AoROptions", aoROptions);
492 }
493
494 public ActionResult GetAoRMetric(AoROptions metricOptions)
495 {
496     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
497     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 185**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Tue Jul 31 2018 13:11:33 GMT-0600 (MDT)

This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: PCDs**Enclosing Method:** PCDs()**File:** Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs:185**Taint Flags:**

```
182 return Content("Invalid Parameters");
183 }
184
185 public ActionResult PCDs(MOE.Common.Models.ViewModel.LinkPivotPCDOptions pcdOptions)
186 {
187     if (ModelState.IsValid)
188     {
```

**Projects/Github/ATSPM/SPM/Controllers/RoutesController.cs, line 99 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Tue Jul 31 2018 13:31:55 GMT-0600 (MDT)

This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: Delete**Enclosing Method:** Delete()**File:** Projects/Github/ATSPM/SPM/Controllers/RoutesController.cs:99**Taint Flags:**

```
96
97 // GET: Routes/Delete/5
98 [Authorize(Roles = "Configuration, Admin")]
99 public ActionResult Delete(int? id)
100 {
```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/RoutesController.cs, line 99 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High**

```
101 if (id == null)
102 {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 539 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: GetApproachDelayMetric  
**Enclosing Method:** GetApproachDelayMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:539  
**Taint Flags:**

```
536 return PartialView("ApproachDelayOptions", approachDelayOptions);
537 }
538
539 public ActionResult GetApproachDelayMetric(ApproachDelayOptions metricOptions)
540 {
541     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
542     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 240 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: GetApproachVolumeMetricByUrl  
**Enclosing Method:** GetApproachVolumeMetricByUrl()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:240



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 240  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Taint Flags:**

```
237 return View("Index", defaultChartsViewModel);
238 }
239
240 public ActionResult GetApproachVolumeMetricByUrl(ApproachVolumeOptions metricOptions)
241 {
242     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
243     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 280  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetApproachSpeedMetricByUrl**Enclosing Method:** GetApproachSpeedMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:280**Taint Flags:**

```
277 return View("Index", defaultChartsViewModel);
278 }
279
280 public ActionResult GetApproachSpeedMetricByUrl(ApproachSpeedOptions metricOptions)
281 {
282     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
283     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/SPMUsersController.cs, line 187  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/SPMUsersController.cs, line 187**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 13:34:31 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: Delete**Enclosing Method:** Delete()**File:** Projects/Github/ATSPM/SPM/Controllers/SPMUsersController.cs:187**Taint Flags:**

```
184 }  
185  
186 // GET: SPMUsers/Delete/5  
187 public ActionResult Delete(string id)  
188 {  
189     if (id == null)  
190     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 179**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details****Analysis** Not an Issue**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:57:38 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetSplitMonitorMetricByUrl**Enclosing Method:** GetSplitMonitorMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:179**Taint Flags:**

```
176 return View("Index", defaultChartsViewModel);  
177 }  
178  
179 public ActionResult GetSplitMonitorMetricByUrl(SplitMonitorOptions metricOptions)  
180 {  
181     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
182     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```



<b>ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST</b>	<b>High</b>
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Package: SPM.Controllers

<b>Projects/Github/ATSPM/SPM/Controllers/MetricCommentsController.cs, line 84 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:30:51 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

#### Sink Details

**Sink:** Function: Delete

**Enclosing Method:** Delete()

**File:** Projects/Github/ATSPM/SPM/Controllers/MetricCommentsController.cs:84

**Taint Flags:**

```

81
82 // GET: MetricComments/Delete/5
83 [Authorize(Roles = "Admin")]
84 public ActionResult Delete(int? id)
85 {
86 if (id == null)
87 {

```

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 204 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:57:46 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

#### Sink Details

**Sink:** Function: GetPreemptMetricByUrl

**Enclosing Method:** GetPreemptMetricByUrl()

**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:204

**Taint Flags:**

```

201 return View("Index", defaultChartsViewModel);
202 }
203
204 public ActionResult GetPreemptMetricByUrl(MetricOptions metricOptions)
205 {

```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 204  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High**

```
206 DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
207 defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 256  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetApproachDelayMetricByUrl**Enclosing Method:** GetApproachDelayMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:256**Taint Flags:**

```
253 return View("Index", defaultChartsViewModel);
254 }
255
256 public ActionResult GetApproachDelayMetricByUrl(ApproachDelayOptions metricOptions)
257 {
258     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
259     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs, line 59  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 13:33:05 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: RouteMap**Enclosing Method:** RouteMap()**File:** Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs:59



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs, line 59  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Taint Flags:**

```
56 return PartialView("RouteInfoBox", viewModel);
57 }
58
59 public ActionResult RouteMap(MOE.Common.Models.ViewModel.Chart.SignalSearchViewModel ssvm)
60 {
61 return PartialView(ssvm);
62 }
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 76  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:57:06 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetMap**Enclosing Method:** GetMap()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:76**Taint Flags:**

```
73 MetricsListViewModel mlv = new MetricsListViewModel(signalID, selectedMetricID);
74 return PartialView("GetMetricsList", mlv);
75 }
76 public ActionResult GetMap(DefaultChartsViewModel dcv)
77 {
78 return PartialView("Map", dcv);
79 }
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 213  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 213**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:58:06 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetTMCMetricByUrl**Enclosing Method:** GetTMCMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:213**Taint Flags:**

```
210 return View("Index", defaultChartsViewModel);
211 }
212
213 public ActionResult GetTMCMetricByUrl(TMCOptions metricOptions)
214 {
215     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
216     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 890**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details****Analysis** Not an Issue**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetPCDMetric**Enclosing Method:** GetPCDMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:890**Taint Flags:**

```
887 return PartialView("MetricResult", result);
888 }
889
890 public ActionResult GetPCDMetric(PCDOptions metricOptions)
891 {
892     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
893     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```



<b>ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST</b>	<b>High</b>
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Package: SPM.Controllers

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 226 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)</b>	<b>High</b>
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#### Issue Details

Kingdom: API Abuse  
Scan Engine: SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

dlowe@utah.gov: Tue Jul 31 2018 12:58:40 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

#### Sink Details

Sink: Function: GetPCDMetricByUrl  
Enclosing Method: GetPCDMetricByUrl()  
File: Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:226  
Taint Flags:

```
223 return View("Index", defaultChartsViewModel);
224 }
225
226 public ActionResult GetPCDMetricByUrl(PCDOptions metricOptions)
227 {
228     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
229     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

<b>Projects/Github/ATSPM/SPM/Controllers/DetectorsController.cs, line 99 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)</b>	<b>High</b>
--	-------------

#### Issue Details

Kingdom: API Abuse  
Scan Engine: SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

dlowe: Fri Jan 04 2019 13:10:50 GMT-0700 (MST)  
This does not update any resources. Not a post method.

#### Sink Details

Sink: Function: Delete  
Enclosing Method: Delete()  
File: Projects/Github/ATSPM/SPM/Controllers/DetectorsController.cs:99  
Taint Flags:

```
96
97 // GET: Detectors/Delete/5
98 [Authorize(Roles = "Admin, Configuration")]
99 public ActionResult Delete(int id)
100 {
```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DetectorsController.cs, line 99  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High**

```
101 if (id == null)
102 {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 585  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: GetPhaseTerminationMetric  
**Enclosing Method:** GetPhaseTerminationMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:585  
**Taint Flags:**

```
582 return PartialView("PhaseTerminationOptions", phaseTerminationOptions);
583 }
584
585 public ActionResult GetPhaseTerminationMetric(PhaseTerminationOptions metricOptions)
586 {
587     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
588     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs, line 217  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 13:33:35 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: Delete  
**Enclosing Method:** Delete()  
**File:** Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs:217



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs, line 217  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Taint Flags:**

```
214
215 // GET: RouteSignals/Delete/5
216 [Authorize(Roles = "Configuration, Admin")]
217 public ActionResult Delete(int? id)
218 {
219     if (id == null)
220     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 806  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: GetSplitMonitorMetric  
**Enclosing Method:** GetSplitMonitorMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:806  
**Taint Flags:**

```
803 return PartialView("GetApproachVolumeMetric", viewModel);
804 }
805
806 public ActionResult GetSplitMonitorMetric(SplitMonitorOptions metricOptions)
807 {
808     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
809     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/FAQsController.cs, line 100 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/FAQsController.cs, line 100 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:56 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: Delete**Enclosing Method:** Delete()**File:** Projects/Github/ATSPM/SPM/Controllers/FAQsController.cs:100**Taint Flags:**

```
97  }  
98  
99  // GET: FAQs/Delete/5  
100 public ActionResult Delete(int? id)  
101 {  
102     if (id == null)  
103     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 138 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details****Analysis** Not an Issue**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:57:18 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetPhaseTerminationMetricByUrl**Enclosing Method:** GetPhaseTerminationMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:138**Taint Flags:**

```
135 }  
136 }  
137  
138 public ActionResult GetPhaseTerminationMetricByUrl(PhaseTerminationOptions metricOptions)  
139 {  
140     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
141     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/ApproachesController.cs, line 73**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe:** Fri Jan 04 2019 13:10:36 GMT-0700 (MST)

This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: Delete**Enclosing Method:** Delete()**File:** Projects/Github/ATSPM/SPM/Controllers/ApproachesController.cs:73**Taint Flags:**

```
70
71 // GET: RouteSignals/Delete/5
72 [Authorize(Roles = "Admin, Configuration")]
73 public ActionResult Delete(int? id)
74 {
75     if (id == null)
76     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 711**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)

This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetTMCMetric**Enclosing Method:** GetTMCMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:711**Taint Flags:**

```
708 return PartialView("TMCOptions", tMCOptions);
709 }
710
711 public ActionResult GetTMCMetric(TMCOptions metricOptions)
712 {
```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 711  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High**

```
713 metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
714 MOE.Common.Business.TMC.TMCInfo tmcInfo = new MOE.Common.Business.TMC.TMCInfo();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 660  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: GetPreemptMetric  
**Enclosing Method:** GetPreemptMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:660  
**Taint Flags:**

```
657 return PartialView("MetricResult", result);  
658 }  
659  
660 public ActionResult GetPreemptMetric(MetricOptions metricOptions)  
661 {  
662 Models.MetricResultViewModel result = new Models.MetricResultViewModel();  
663
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 446  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details**

**Sink:** Function: GetApproachSpeedMetric  
**Enclosing Method:** GetApproachSpeedMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:446





**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 446  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Taint Flags:**

```
443 return PartialView("ApproachSpeedOptions", approachSpeedOptions);
444 }
445
446 public ActionResult GetApproachSpeedMetric(ApproachSpeedOptions metricOptions)
447 {
448     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
449     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs, line 627 (ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 13:34:02 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: Delete**Enclosing Method:** Delete()**File:** Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs:627**Taint Flags:**

```
624
625 // GET: Signals/Delete/5
626 [Authorize(Roles = "Admin, Configuration")]
627 public ActionResult Delete(string id)
628 {
629     if (id == null)
630     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 343  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 343**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetYellowAndRedMetric**Enclosing Method:** GetYellowAndRedMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:343**Taint Flags:**

```
340 return PartialView("YellowAndRedOptions", yellowAndRedOptions);
341 }
342
343 public ActionResult GetYellowAndRedMetric(YellowAndRedOptions metricOptions)
344 {
345     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
346     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 764**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details****Analysis** Not an Issue**Audit Comments**

**dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.

**Sink Details****Sink:** Function: GetApproachVolumeMetric**Enclosing Method:** GetApproachVolumeMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:764**Taint Flags:**

```
761 return PartialView("ApproachVolumeOptions", approachVolumeOptions);
762 }
763
764 public ActionResult GetApproachVolumeMetric(ApproachVolumeOptions metricOptions)
765 {
766     MOE.Common.Models.Repositories.IApplicationEventRepository logRepository =
MOE.Common.Models.Repositories.ApplicationEventRepositoryFactory.Create();
767     MOE.Common.Business.ApproachVolume.ApproachVolumeViewModel viewModel = new
ApproachVolumeViewModel();
```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 269**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.**Sink Details****Sink:** Function: GetAoRMetricByUrl**Enclosing Method:** GetAoRMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:269**Taint Flags:**

```
266 return View("Index", defaultChartsViewModel);
267 }
268
269 public ActionResult GetAoRMetricByUrl(AoROptions metricOptions)
270 {
271     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
272     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 313**  
**(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Tue Jul 31 2018 12:59:09 GMT-0600 (MDT)  
This does not update any resources. Not a post method.**Sink Details****Sink:** Function: GetSplitFailMetricByUrl**Enclosing Method:** GetSplitFailMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:313**Taint Flags:**

```
310 return View("Index", defaultChartsViewModel);
311 }
312
313 public ActionResult GetSplitFailMetricByUrl(SplitFailOptions metricOptions)
314 {
```



**ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 313  
(ASP.NET MVC Bad Practices: Controller Action Not Restricted to POST)****High**

```
315 DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
316 defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```



# ASP.NET MVC Bad Practices: Model With Optional and Required Properties (32 issues)

## Abstract

The model class has properties that are required and properties that are not required and therefore may be susceptible to over-posting attacks.

## Explanation

Using a model class that has properties that are required (as marked with the `[Required]` attribute) and properties that are optional (as not marked with the `[Required]` attribute) can lead to problems if an attacker communicates a request that contains more data than is expected. The ASP.NET MVC framework will try to bind request parameters to model properties. Having mixed requiredness without explicitly communicating which parameters are to be model-bound may indicate that there are model properties for internal use but can be controlled by attacker. The following code defines a possible model class that has properties that have `[Required]` and properties that do not have `[Required]`:

```
public class MyModel
{
    [Required]
    public String UserName { get; set; }

    [Required]
    public String Password { get; set; }

    public Boolean IsAdmin { get; set; }
}
```

If any optional parameters can change the behavior of an application, then an attacker may be able to actually change that behavior by communicating an optional parameter in a request.

## Recommendation

There are a few possible mechanisms to prevent optional binding: 1. Define model classes specific to external communication. The following code defines a model class where all properties have `[Required]`, and without any optional properties:

```
public class MyRequiredModel
{
    [Required]
    public String UserName { get; set; }

    [Required]
    public String Password { get; set; }
}
```

2. Use the `[Bind]` attribute to control which parameters should be bound to the model object from the request. The following code defines a possible model class that has properties that have `[Required]` and properties that do not have `[Required]` and has the `[Bind]` attribute to specify which parameters should be bound:

```
[Bind(Include="UserName,Password")]
public class MyModel
{
    [Required]
    public String UserName { get; set; }

    [Required]
    public String Password { get; set; }
}
```



```
    public Boolean IsAdmin { get; set; }
}
```

The following code applies the [Bind] attribute at the controller action method:

```
[HttpPost]
public ActionResult Login([Bind(Include = "UserName,Password")] MyModel model)
{
    // ... controller logic
}
```

## Issue Summary

## Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
ASP.NET MVC Bad Practices: Model With Optional and Required Properties	32	0	0	32
<b>Total</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>32</b>

<b>ASP.NET MVC Bad Practices: Model With Optional and Required Properties</b>	<b>High</b>
---	-------------

Package: SPM.Controllers

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 890 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)</b>	<b>High</b>
--	-------------

### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

### Audit Details

Analysis                      Bad Practice

### Sink Details

**Sink:** Function: GetPCDMetric

**Enclosing Method:** GetPCDMetric()

**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:890

**Taint Flags:**

```
887 return PartialView("MetricResult", result);
888 }
889
890 public ActionResult GetPCDMetric(PCDOptions metricOptions)
891 {
```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 890  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
892 metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
893 Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 226  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Function: GetPCDMetricByUrl  
**Enclosing Method:** GetPCDMetricByUrl()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:226  
**Taint Flags:**

```
223 return View("Index", defaultChartsViewModel);  
224 }  
225  
226 public ActionResult GetPCDMetricByUrl(PCDOptions metricOptions)  
227 {  
228     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
229     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 711  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Function: GetTMCMetric  
**Enclosing Method:** GetTMCMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:711  
**Taint Flags:**

```
708 return PartialView("TMCOptions", tMCOptions);  
709 }  
710  
711 public ActionResult GetTMCMetric(TMCOptions metricOptions)  
712 {
```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 711  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
713 metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
714 MOE.Common.Business.TMC.TMCInfo tmcInfo = new MOE.Common.Business.TMC.TMCInfo();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 204  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Function: GetPreemptMetricByUrl  
**Enclosing Method:** GetPreemptMetricByUrl()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:204  
**Taint Flags:**

```
201 return View("Index", defaultChartsViewModel);  
202 }  
203  
204 public ActionResult GetPreemptMetricByUrl(MetricOptions metricOptions)  
205 {  
206     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
207     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 154  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Function: GetRecordCount  
**Enclosing Method:** GetRecordCount()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs:154  
**Taint Flags:**

```
151 return processedCodes;  
152 }  
153  
154 public ActionResult GetRecordCount(DataExportViewModel dataExportViewModel)  
155 {
```





**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 154  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
156 if (ModelState.IsValid)
157 {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 280  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Function: GetApproachSpeedMetricByUrl  
**Enclosing Method:** GetApproachSpeedMetricByUrl()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:280  
**Taint Flags:**

```
277 return View("Index", defaultChartsViewModel);
278 }
279
280 public ActionResult GetApproachSpeedMetricByUrl(ApproachSpeedOptions metricOptions)
281 {
282     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
283     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 41  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Function: RawDataExport  
**Enclosing Method:** RawDataExport()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs:41  
**Taint Flags:**

```
38 }
39
40 [HttpPost]
41 public ActionResult RawDataExport(DataExportViewModel dataExportViewModel)
42 {
```



<b>ASP.NET MVC Bad Practices: Model With Optional and Required Properties</b>	<b>High</b>
<b>Package: SPM.Controllers</b>	
<b>Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 41 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)</b>	<b>High</b>

```

43 string response = Request["g-recaptcha-response"];
44 bool status = GetReCaptchaStatus(response);

```

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 764 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis                      Bad Practice

#### Sink Details

**Sink:** Function: GetApproachVolumeMetric  
**Enclosing Method:** GetApproachVolumeMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:764  
**Taint Flags:**

```

761 return PartialView("ApproachVolumeOptions", approachVolumeOptions);
762 }
763
764 public ActionResult GetApproachVolumeMetric(ApproachVolumeOptions metricOptions)
765 {
766     MOE.Common.Models.Repositories.IApplicationEventRepository logRepository =
MOE.Common.Models.Repositories.ApplicationEventRepositoryFactory.Create();
767     MOE.Common.Business.ApproachVolume.ApproachVolumeViewModel viewModel = new
ApproachVolumeViewModel();

```

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 256 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis                      Bad Practice

#### Sink Details

**Sink:** Function: GetApproachDelayMetricByUrl  
**Enclosing Method:** GetApproachDelayMetricByUrl()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:256  
**Taint Flags:**

```

253 return View("Index", defaultChartsViewModel);
254 }
255
256 public ActionResult GetApproachDelayMetricByUrl(ApproachDelayOptions metricOptions)

```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 256  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
257 {  
258 DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
259 defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 185  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: PCDs**Enclosing Method:** PCDs()**File:** Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs:185**Taint Flags:**

```
182 return Content("Invalid Parameters");  
183 }  
184  
185 public ActionResult PCDs(MOE.Common.Models.ViewModel.LinkPivotPCDOptions pcdOptions)  
186 {  
187 if (ModelState.IsValid)  
188 {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 494  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: GetAoRMetric**Enclosing Method:** GetAoRMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:494**Taint Flags:**

```
491 return PartialView("AoROptions", aoROptions);  
492 }  
493  
494 public ActionResult GetAoRMetric(AoROptions metricOptions)
```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 494 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
495 {  
496 metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
497 Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs, line 336 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: CopyVersion**Enclosing Method:** CopyVersion()**File:** Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs:336**Taint Flags:**

```
333 [HttpPost]  
334 [ValidateAntiForgeryToken]  
335 [Authorize(Roles = "Admin, Configuration")]  
336 public ActionResult CopyVersion(Signal signal)  
337 {  
338  
339 //originalSignalVersion = SetDetectionTypes(originalSignalVersion);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 446 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: GetApproachSpeedMetric**Enclosing Method:** GetApproachSpeedMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:446**Taint Flags:**

```
443 return PartialView("ApproachSpeedOptions", approachSpeedOptions);  
444 }  
445  
446 public ActionResult GetApproachSpeedMetric(ApproachSpeedOptions metricOptions)
```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 446  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
447 {  
448     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
449     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 51  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: LinkPivotResult**Enclosing Method:** LinkPivotResult()**File:** Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs:51**Taint Flags:**

```
48     return PartialView("FillSignals", signals);  
49 }  
50  
51 public ActionResult LinkPivotResult(MOE.Common.Models.ViewModel.LinkPivotViewModel lpvm)  
52 {  
53     if (ModelState.IsValid)  
54     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 660  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: GetPreemptMetric**Enclosing Method:** GetPreemptMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:660**Taint Flags:**

```
657     return PartialView("MetricResult", result);  
658 }  
659  
660 public ActionResult GetPreemptMetric(MetricOptions metricOptions)
```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 660  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
661 {  
662     Models.MetricResultViewModel result = new Models.MetricResultViewModel();  
663 }
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 585  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: GetPhaseTerminationMetric**Enclosing Method:** GetPhaseTerminationMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:585**Taint Flags:**

```
582     return PartialView("PhaseTerminationOptions", phaseTerminationOptions);  
583 }  
584  
585 public ActionResult GetPhaseTerminationMetric(PhaseTerminationOptions metricOptions)  
586 {  
587     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
588     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/AggregateDataExportController.cs, line 79  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: CreateMetric**Enclosing Method:** CreateMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/AggregateDataExportController.cs:79**Taint Flags:**

```
76 // POST: AggDataExportViewModel  
77 [HttpPost]  
78 [ValidateAntiForgeryToken]  
79 public ActionResult CreateMetric(AggDataExportViewModel aggDataExportViewModel)
```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/AggregateDataExportController.cs, line 79 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
80 {  
81     switch (aggDataExportViewModel.SelectedMetricTypeId)  
82     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 313 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: GetSplitFailMetricByUrl**Enclosing Method:** GetSplitFailMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:313**Taint Flags:**

```
310     return View("Index", defaultChartsViewModel);  
311 }  
312  
313 public ActionResult GetSplitFailMetricByUrl(SplitFailOptions metricOptions)  
314 {  
315     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
316     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 624 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: GetTimingAndActuations**Enclosing Method:** GetTimingAndActuations()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:624**Taint Flags:**

```
621     return PartialView("MetricResult", result);  
622 }  
623  
624 public ActionResult GetTimingAndActuations (TimingAndActuationsOptions metricOptions)
```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 624  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
625 {  
626     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
627     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs, line 59  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: RouteMap**Enclosing Method:** RouteMap()**File:** Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs:59**Taint Flags:**

```
56     return PartialView("RouteInfoBox", viewModel);  
57 }  
58  
59 public ActionResult RouteMap(MOE.Common.Models.ViewModel.Chart.SignalSearchViewModel ssvm)  
60 {  
61     return PartialView(ssvm);  
62 }
```

**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 162  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: LinkPivotPCDOptions**Enclosing Method:** LinkPivotPCDOptions()**File:** Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs:162**Taint Flags:**

```
159     return View(lpvm);  
160 }  
161 [HttpPost]  
162 public ActionResult LinkPivotPCDOptions(MOE.Common.Models.ViewModel.LinkPivotViewModel
```





**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 162  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
lpvm)
163 {
164 if (ModelState.IsValid)
165 {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 34  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: SignalSearch**Enclosing Method:** SignalSearch()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:34**Taint Flags:**

```
31 }
32 }
33
34 public ActionResult SignalSearch(SignalSearchViewModel ssvm)
35 {
36 return PartialView("SignalSearch", ssvm);
37 }
```

**Projects/Github/ATSPM/SPM/Controllers/DatabaseArchiveSettingsController.cs,  
line 46 (ASP.NET MVC Bad Practices: Model With Optional and Required  
Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: Edit**Enclosing Method:** Edit()**File:** Projects/Github/ATSPM/SPM/Controllers/DatabaseArchiveSettingsController.cs:46**Taint Flags:**

```
43 // more details see https://go.microsoft.com/fwlink/?LinkId=317598.
44 [HttpPost]
```



**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DatabaseArchiveSettingsController.cs, line 46 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
45 [ValidateAntiForgeryToken]
46 public ActionResult
  Edit(MOE.Common.Models.ViewModel.DatabaseArchive.ArchiveSettingsViewModel
  archiveSettingsViewModel)
47 {
48     if (ModelState.IsValid)
49     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 76 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: GetMap**Enclosing Method:** GetMap()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:76**Taint Flags:**

```
73 MetricsListViewModel mlv = new MetricsListViewModel(signalID, selectedMetricID);
74 return PartialView("GetMetricsList", mlv);
75 }
76 public ActionResult GetMap(DefaultChartsViewModel dcv)
77 {
78     return PartialView("Map", dcv);
79 }
```

**Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs, line 554 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: Edit**Enclosing Method:** Edit()**File:** Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs:554**Taint Flags:**

**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs, line 554 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
551 [HttpPost]
552 [ValidateAntiForgeryToken]
553 [Authorize(Roles = "Admin, Configuration")]
554 public ActionResult Edit(Signal signal)
555 {
556     try
557     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 213 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Function: GetTMCMetricByUrl**Enclosing Method:** GetTMCMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:213**Taint Flags:**

```
210 return View("Index", defaultChartsViewModel);
211 }
212
213 public ActionResult GetTMCMetricByUrl(TMCOptions metricOptions)
214 {
215     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
216     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 539 (ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Function: GetApproachDelayMetric**Enclosing Method:** GetApproachDelayMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:539**Taint Flags:**

**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 539  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
536 return PartialView("ApproachDelayOptions", approachDelayOptions);
537 }
538
539 public ActionResult GetApproachDelayMetric(ApproachDelayOptions metricOptions)
540 {
541     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
542     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 269  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Function: GetAoRMetricByUrl**Enclosing Method:** GetAoRMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:269**Taint Flags:**

```
266 return View("Index", defaultChartsViewModel);
267 }
268
269 public ActionResult GetAoRMetricByUrl(AoROptions metricOptions)
270 {
271     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
272     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 399  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Function: GetSplitFailMetric**Enclosing Method:** GetSplitFailMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:399**Taint Flags:**

**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 399  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
396 return PartialView("SplitFailOptions", splitFailOptions);
397 }
398
399 public ActionResult GetSplitFailMetric(SplitFailOptions metricOptions)
400 {
401     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
402     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 149  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Function: TimingAndActionResultByUrl**Enclosing Method:** TimingAndActionResultByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:149**Taint Flags:**

```
146 "); CreateMetric();";
147 return View("Index", defaultChartsViewModel);
148 }
149 public ActionResult TimingAndActionResultByUrl(TimingAndActuationsOptions metricOptions)
150 {
151     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
152     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 138  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Function: GetPhaseTerminationMetricByUrl**Enclosing Method:** GetPhaseTerminationMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:138**Taint Flags:**

**ASP.NET MVC Bad Practices: Model With Optional and Required Properties****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 138  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High**

```
135 }
136 }
137
138 public ActionResult GetPhaseTerminationMetricByUrl(PhaseTerminationOptions metricOptions)
139 {
140     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
141     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 240  
(ASP.NET MVC Bad Practices: Model With Optional and Required Properties)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Function: GetApproachVolumeMetricByUrl**Enclosing Method:** GetApproachVolumeMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:240**Taint Flags:**

```
237 return View("Index", defaultChartsViewModel);
238 }
239
240 public ActionResult GetApproachVolumeMetricByUrl(ApproachVolumeOptions metricOptions)
241 {
242     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
243     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```



## ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property (23 issues)

### Abstract

The model class has a required non-nullable property and therefore may be susceptible to under-posting attacks.

### Explanation

Using a model class that has non-nullable properties that are required (as marked with the `[Required]` attribute) can lead to problems if an attacker communicates a request that contains less data than is expected. The ASP.NET MVC framework will try to bind request parameters to model properties. If a model has a required non-nullable parameter and an attacker does not communicate that required parameter in a request -- that is, the attacker uses an under-posting attack -- then the property will have the default value (usually zero) which will satisfy the `[Required]` validation attribute. This may produce unexpected application behavior. The following code defines a possible model class that has a required enum, which is non-nullable:

```
public enum ArgumentOptions
{
    OptionA = 1,
    OptionB = 2
}

public class Model
{
    [Required]
    public String Argument { get; set; }

    [Required]
    public ArgumentOptions Rounding { get; set; }
}
```

### Recommendation

There are a few possible ways to address this problem: 1. Wrap non-nullable types in a Nullable. If an attacker does not communicate a value, then the property will be null and will not satisfy the `[Required]` validation attribute. The following code defines a possible model class that wraps an enum with a Nullable (as with the `?` after the type of the property):

```
public enum ArgumentOptions
{
    OptionA = 1,
    OptionB = 2
}

public class Model
{
    [Required]
    public String Argument { get; set; }

    [Required]
    public ArgumentOptions? Rounding { get; set; }
}
```

2. Define the default value of zero as a safe default or as a known invalid value. The following code defines a possible model class that has a required enum, which is non-nullable, but has a safe default value:



```

public enum ArgumentOptions
{
    Default = 0,
    OptionA = 1,
    OptionB = 2
}

public class Model
{
    [Required]
    public String Argument { get; set; }

    [Required]
    public ArgumentOptions Rounding { get; set; }
}

```

## Issue Summary

## Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property	23	0	0	23
<b>Total</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>23</b>

<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachCycleAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>

### Issue Details

Kingdom: API Abuse  
Scan Engine: SCA (Structural)

### Audit Details

Analysis Not an Issue

### Audit Comments

dlowe@utah.gov: Wed Aug 01 2018 10:40:11 GMT-0600 (MDT)  
We do not want nullable dates in the database.





<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
---	-------------

**Package:** MOE.Common.Models

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachCycleAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Sink Details

**Sink:** Function: set\_BinStartTime

**Enclosing Method:** set\_BinStartTime()

**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachCycleAggregation.cs:15

**Taint Flags:**

```

12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public int ApproachId { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/Detector.cs, line 60 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 10:52:22 GMT-0600 (MDT)

We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_DateAdded

**Enclosing Method:** set\_DateAdded()

**File:** Projects/Github/ATSPM/MOE.Common/Models/Detector.cs:60

**Taint Flags:**

```

57 [Required]
58 [Display(Name = "Date Added")]
59 [DataMember]
60 public DateTime DateAdded { get; set; }
61
62 [Display(Name = "Date Disabled")]
63 [DataMember]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachSplitFailAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Issue Details



**ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property****High****Package:** MOE.Common.Models**Projects/Github/ATSPM/MOE.Common/Models/ApproachSplitFailAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)****High****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 10:43:42 GMT-0600 (MDT)

We do not want nullable dates in the database

**Sink Details****Sink:** Function: set\_BinStartTime**Enclosing Method:** set\_BinStartTime()**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachSplitFailAggregation.cs:15**Taint Flags:**

```
12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public int ApproachId { get; set; }
```

**Projects/Github/ATSPM/MOE.Common/Models/ApproachPcdAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 10:39:39 GMT-0600 (MDT)

We do not want nullable dates in the database

**Sink Details****Sink:** Function: set\_BinStartTime**Enclosing Method:** set\_BinStartTime()**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachPcdAggregation.cs:15**Taint Flags:**

```
12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
```



<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
---	-------------

**Package: MOE.Common.Models**

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachPcdAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

```
17 [Required]
18 public int ApproachId { get; set; }
```

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachSpeedAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 10:42:34 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime  
**Enclosing Method:** set\_BinStartTime()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachSpeedAggregation.cs:15  
**Taint Flags:**

```
12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public int ApproachId { get; set; }
```

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachYellowRedActivationsAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 10:45:11 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime



**ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property****High****Package: MOE.Common.Models****Projects/Github/ATSPM/MOE.Common/Models/ApproachYellowRedActivationsAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)****High****Enclosing Method:** set\_BinStartTime()**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachYellowRedActivationsAggregation.cs:15**Taint Flags:**

```
12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public int ApproachId { get; set; }
```

**Projects/Github/ATSPM/MOE.Common/Models/PriorityAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 11:11:14 GMT-0600 (MDT)

We do not want nullable dates in the database

**Sink Details****Sink:** Function: set\_BinStartTime**Enclosing Method:** set\_BinStartTime()**File:** Projects/Github/ATSPM/MOE.Common/Models/PriorityAggregation.cs:15**Taint Flags:**

```
12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 [StringLength(10)]
```

**Projects/Github/ATSPM/MOE.Common/Models/PreemptionAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)

<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/PreemptionAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 11:10:12 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime

**Enclosing Method:** set\_BinStartTime()

**File:** Projects/Github/ATSPM/MOE.Common/Models/PreemptionAggregation.cs:15

**Taint Flags:**

```

12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 [StringLength(10)]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/StatusOfProcessedTable.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 11:22:20 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_TimeEntered

**Enclosing Method:** set\_TimeEntered()

**File:** Projects/Github/ATSPM/MOE.Common/Models/StatusOfProcessedTable.cs:15

**Taint Flags:**

```

12 [Required]
13 public string PartitionedTableName { get; set; }
14 [Required]
15 public DateTime TimeEntered { get; set; }
16 public string PartitionName { get; set; }
17 public int PartitionYear { get; set; }
18 [Required]

```



<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/SPMWatchDogErrorEvent.cs, line 11 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe:** Fri Jan 04 2019 13:17:43 GMT-0700 (MST)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_TimeStamp  
**Enclosing Method:** set\_TimeStamp()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/SPMWatchDogErrorEvent.cs:11  
**Taint Flags:**

```

8 [Key]
9 public int Id { get; set; }
10 [Required]
11 public DateTime TimeStamp { get; set; }
12 [Required]
13 public string SignalId { get; set; }
14 public string DetectorId { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/Signal.cs, line 70 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 11:15:29 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_Start  
**Enclosing Method:** set\_Start()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/Signal.cs:70  
**Taint Flags:**

```

67 [Display(Name = "Version Start")]
68 [DataMember]
69 [DataType(DataType.Date)]
70 public DateTime Start { get; set; }
71

```



<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/Signal.cs, line 70 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>

```

72 [Required]
73 [Display(Name = "Primary Name")]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/DetectorEventCountAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 10:54:08 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime  
**Enclosing Method:** set\_BinStartTime()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/DetectorEventCountAggregation.cs:15  
**Taint Flags:**

```

12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public string DetectorId { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/Comment.cs, line 18 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 10:46:46 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_TimeStamp  
**Enclosing Method:** set\_TimeStamp()



<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/Comment.cs, line 18 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>

**File:** Projects/Github/ATSPM/MOE.Common/Models/Comment.cs:18

**Taint Flags:**

```

15
16 [Required]
17 [DataMember]
18 public DateTime TimeStamp { get; set; }
19
20 [Required(AllowEmptyStrings = true)]
21 [Display(Name = "Comment Text")]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/PhasePedAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 11:07:16 GMT-0600 (MDT)

We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime

**Enclosing Method:** set\_BinStartTime()

**File:** Projects/Github/ATSPM/MOE.Common/Models/PhasePedAggregation.cs:15

**Taint Flags:**

```

12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public string SignalId { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/PhaseEventCountAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue





<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/PhaseEventCountAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 11:07:05 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime  
**Enclosing Method:** set\_BinStartTime()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/PhaseEventCountAggregation.cs:15  
**Taint Flags:**

```

12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public int ApproachId { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/ApplicationEvent.cs, line 20 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 10:41:40 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_Timestamp  
**Enclosing Method:** set\_Timestamp()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ApplicationEvent.cs:20  
**Taint Flags:**

```

17 public int ID { get; set; }
18
19 [Required]
20 public DateTime Timestamp { get; set; }
21
22 [Required]
23 public string ApplicationName { get; set; }

```



<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/PhaseTerminationAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 11:10:04 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime  
**Enclosing Method:** set\_BinStartTime()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/PhaseTerminationAggregation.cs:15  
**Taint Flags:**

```

12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public string SignalId { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/SPMWatchDogErrorEvent.cs, line 31 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 11:22:08 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_TimeStamp  
**Enclosing Method:** set\_TimeStamp()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/SPMWatchDogErrorEvent.cs:31  
**Taint Flags:**

```

28 public int ID { get; set; }
29
30 [Required]
31 public DateTime TimeStamp { get; set; }

```



<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
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**Package: MOE.Common.Models**

<b>Projects/Github/ATSPM/MOE.Common/Models/SPMWatchDogErrorEvent.cs, line 31 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
---	-------------

```

32
33 [Required]
34 public string SignalID { get; set; }
```

<b>Projects/Github/ATSPM/MOE.Common/Models/DetectorAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 10:52:59 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime  
**Enclosing Method:** set\_BinStartTime()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/DetectorAggregation.cs:15  
**Taint Flags:**

```

12 public long Id { get; set; }
13
14 [Required]
15 public DateTime BinStartTime { get; set; }
16
17 [ForeignKey("Detector")]
18 [Required]
```

<b>Projects/Github/ATSPM/MOE.Common/Models/SignalEventCountAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 11:15:40 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_BinStartTime



**ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property****High****Package: MOE.Common.Models****Projects/Github/ATSPM/MOE.Common/Models/SignalEventCountAggregation.cs, line 15 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)****High****Enclosing Method:** set\_BinStartTime()**File:** Projects/Github/ATSPM/MOE.Common/Models/SignalEventCountAggregation.cs:15**Taint Flags:**

```
12 public override long Id { get; set; }
13
14 [Required]
15 public override DateTime BinStartTime { get; set; }
16
17 [Required]
18 public string SignalId { get; set; }
```

**Projects/Github/ATSPM/MOE.Common/Models/ApplicationEvent.cs, line 29 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Wed Aug 01 2018 10:40:54 GMT-0600 (MDT)  
We do not want this field nullable in the database

**Sink Details****Sink:** Function: set\_SeverityLevel**Enclosing Method:** set\_SeverityLevel()**File:** Projects/Github/ATSPM/MOE.Common/Models/ApplicationEvent.cs:29**Taint Flags:**

```
26 public string Description { get; set; }
27
28 [Required]
29 public SeverityLevels SeverityLevel { get; set; }
30
31 public string Class { get; set; }
32
```

**Package: MOE.Common.Models.ViewModel.Chart****Projects/Github/ATSPM/MOE.Common/Models/ViewModel/Chart/DefaultChartsViewModel.cs, line 24 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)****High****Issue Details****Kingdom:** API Abuse

<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>	<b>High</b>
<b>Package: MOE.Common.Models.ViewModel.Chart</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/ViewModel/Chart/DefaultChartsViewModel.cs, line 24 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>

Scan Engine: SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**yxing:** Thu Apr 11 2019 11:41:03 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_StartDateDay  
**Enclosing Method:** set\_StartDateDay()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ViewModel/Chart/DefaultChartsViewModel.cs:24  
**Taint Flags:**

```

21 [DataType(DataType.Date)]
22 [DisplayFormat(DataFormatString = "{0:MM/dd/yyyy}", ApplyFormatInEditMode = true)]
23 [Display(Name = "Start Date")]
24 public DateTime StartDateDay { get; set; }
25
26 [Required]
27 [Display(Name = "Start Time")]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/ViewModel/Chart/DefaultChartsViewModel.cs, line 38 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**yxing:** Thu Apr 11 2019 11:41:12 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_EndDateDay  
**Enclosing Method:** set\_EndDateDay()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ViewModel/Chart/DefaultChartsViewModel.cs:38  
**Taint Flags:**

```

35 [DataType(DataType.Date)]
36 [DisplayFormat(DataFormatString = "{0:MM/dd/yyyy}", ApplyFormatInEditMode = true)]
37 [Display(Name = "End Date")]
38 public DateTime EndDateDay { get; set; }
39

```



<b>ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property</b>		<b>High</b>
<b>Package: MOE.Common.Models.ViewModel.Chart</b>		
<b>Projects/Github/ATSPM/MOE.Common/Models/ViewModel/Chart/DefaultChartsViewModel.cs, line 38 (ASP.NET MVC Bad Practices: Model With Required Non-Nullable Property)</b>		<b>High</b>
<pre> 40  [Required] 41  [Display(Name = "End Time")] </pre>		



# ASP.NET MVC Bad Practices: Optional Submodel With Required Property (41 issues)

## Abstract

The model class has a required property and is the type of an optional member of a parent model type and therefore may be susceptible to under-posting attacks.

## Explanation

If a model class has required property and is the type of an optional member of a parent model class, it may be susceptible to under-posting attacks if an attacker communicates a request that contains less data than is expected. The ASP.NET MVC framework will try to bind request parameters to model properties, including submodels. If a submodel is optional -- that is, the parent model has a property without the [Required] attribute -- and if an attacker does not communicate that submodel, then the parent property will have a null value and the required fields of the child model will not be asserted by model validation. This is one form of an under-posting attack. Consider the following the model class definitions:

```
public class ChildModel
{
    public ChildModel()
    {
    }

    [Required]
    public String RequiredProperty { get; set; }
}

public class ParentModel
{
    public ParentModel()
    {
    }

    public ChildModel Child { get; set; }
}
```

If an attacker does not communicate a value for the ParentModel.Child property, then the ChildModel.RequiredProperty property will have a [Required] which is not asserted. This may produce unexpected and undesirable results.

## Recommendation

Make the child model field required:

```
public class ChildModel
{
    public ChildModel()
    {
    }

    [Required]
    public String RequiredProperty { get; set; }
}

public class ParentModel
{
    public ParentModel()
    {
    }
}
```



```

    }

    [Required]
    public ChildModel Child { get; set; }
}

```

## Issue Summary

## Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
ASP.NET MVC Bad Practices: Optional Submodel With Required Property	41	0	0	41
<b>Total</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>41</b>

<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
--	-------------

Package: MOE.Common.Business

<b>Projects/Github/ATSPM/MOE.Common/Business/RLM/RLMPlan.cs, line 167 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

### Audit Details

Analysis Not an Issue

### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)

These relationships are required for either partial views or to define a relationship in entity framework

### Sink Details

**Sink:** Function: set\_Approach

**Enclosing Method:** set\_Approach()

**File:** Projects/Github/ATSPM/MOE.Common/Business/RLM/RLMPlan.cs:167

**Taint Flags:**

```

164 }
165 }
166
167 public Approach Approach { get; set; }

```





<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/RLM/RLMPlan.cs, line 167 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

```

168
169 private RLMCycle.EventType GetEventType(int EventCode)
170 {

```

<b>Projects/Github/ATSPM/MOE.Common/Business/ArriveOnRedChart.cs, line 91 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

**dlowe@utah.gov:** Wed Aug 01 2018 10:46:34 GMT-0600 (MDT)  
This property is not marked required

#### Sink Details

**Sink:** Function: set\_Options  
**Enclosing Method:** set\_Options()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/ArriveOnRedChart.cs:91  
**Taint Flags:**

```

88 SetPlanStrips(signalPhase.Plans, Chart, Options.StartDate, Options.ShowPlanStatistics);
89 }
90
91 public AoROptions Options { get; set; }
92
93 private void SetChartTitles(SignalPhase signalPhase, Dictionary<string, string> statistics)
94 {

```

<b>Projects/Github/ATSPM/MOE.Common/Business/DelayChart.cs, line 104 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/DelayChart.cs, line 104 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

**Sink:** Function: set\_Options  
**Enclosing Method:** set\_Options()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/DelayChart.cs:104  
**Taint Flags:**

```

101 SetPlanStrips(signalPhase.Plans, Chart, Options.StartDate, Options.ShowPlanStatistics);
102 }
103
104 public ApproachDelayOptions Options { get; set; }
105
106 private void SetChartTitles(SignalPhase signalPhase, Dictionary<string, string>
statistics)
107 {

```

<b>Projects/Github/ATSPM/MOE.Common/Business/RLM/RLMSignalPhase.cs, line 103 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/RLM/RLMSignalPhase.cs:103  
**Taint Flags:**

```

100 }
101 }
102
103 public Approach Approach { get; set; }
104
105 private void GetSignalPhaseData(DateTime startDate, DateTime endDate, bool
usePermissivePhase)
106 {

```

<b>Projects/Github/ATSPM/MOE.Common/Business/Detector.cs, line 105 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/Detector.cs, line 105 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_LaneType  
**Enclosing Method:** set\_LaneType()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/Detector.cs:105  
**Taint Flags:**

```

102
103 public int Order { get; }
104
105 public LaneType LaneType { get; set; }
106
107 public Models.Detector DetectorModel { get; set; }
108

```

<b>Projects/Github/ATSPM/MOE.Common/Business/Phase.cs, line 37 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/Phase.cs:37  
**Taint Flags:**

```

34
35 public List<PhaseCycleBase> Cycles { get; set; }
36
37 public Models.Approach Approach { get; set; }
38
39 public string SignalId { get; set; }
40

```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/Detector.cs, line 95 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/Detector.cs:95  
**Taint Flags:**

```

92 public int Channel { get; }
93
94 public int ApproachID { get; set; }
95 public Approach Approach { get; set; }
96
97 public VolumeCollection Volumes { get; }
98

```

<b>Projects/Github/ATSPM/MOE.Common/Business/DetectorCollection.cs, line 53 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_DetectionHardware  
**Enclosing Method:** set\_DetectionHardware()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/DetectorCollection.cs:53  
**Taint Flags:**

```

50 public List<Detector> WBPedDetectors { get; set; }
51 public List<Detector> PedDetectors { get; set; }
52
53 public DetectionHardware DetectionHardware { get; set; }
54

```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
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**Package:** MOE.Common.Business

<b>Projects/Github/ATSPM/MOE.Common/Business/DetectorCollection.cs, line 53 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

```
55 public List<Detector> NBLeftDetectors { get; } = new List<Detector>();
56
```

<b>Projects/Github/ATSPM/MOE.Common/Business/Detector.cs, line 107 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_DetectorModel  
**Enclosing Method:** set\_DetectorModel()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/Detector.cs:107  
**Taint Flags:**

```
104
105 public LaneType LaneType { get; set; }
106
107 public Models.Detector DetectorModel { get; set; }
108
109 public override string ToString()
110 {
```

<b>Projects/Github/ATSPM/MOE.Common/Business/RLM/RLMPlanCollection.cs, line 37 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/RLM/RLMPlanCollection.cs, line 37 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

**File:** Projects/Github/ATSPM/MOE.Common/Business/RLM/RLMPlanCollection.cs:37  
**Taint Flags:**

```

34
35 public double SRLVSeconds { get; }
36
37 public Approach Approach { get; set; }
38
39
40 public void GetPlanCollection(DateTime startDate, DateTime endDate,

```

<b>Package: MOE.Common.Business.ApproachVolume</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/ApproachVolume/ApproachVolume.cs, line 24 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_DetectionType  
**Enclosing Method:** set\_DetectionType()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/ApproachVolume/ApproachVolume.cs:24  
**Taint Flags:**

```

21 public VolumeCollection CombinedDirectionsVolumes { get; private set; }
22 public DirectionType PrimaryDirection { get; private set; }
23 public DirectionType OpposingDirection { get; private set; }
24 public DetectionType DetectionType { get; set; }
25 public List<Models.Detector> Detectors { get; set; } = new List<Models.Detector>();
26 public MetricInfo MetricInfo { get; set; } = new MetricInfo();
27 public List<Controller_Event_Log> PrimaryDetectorEvents { get; set; } = new
List<Controller_Event_Log>();

```

<b>Projects/Github/ATSPM/MOE.Common/Business/ApproachVolume/Approach.cs, line 26 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business.ApproachVolume</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/ApproachVolume/Approach.cs, line 26 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_ApproachModel  
**Enclosing Method:** set\_ApproachModel()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/ApproachVolume/Approach.cs:26  
**Taint Flags:**

```

23
24 public ControllerEventLogs DetectorEvents { get; private set; }
25
26 public Models.Approach ApproachModel { get; set; }
27
28 public void SetDetectorEvents(Models.Approach approach, DateTime startdate, DateTime
enddate, bool has_pcd,
29 bool has_tmc)
  
```

<b>Package: MOE.Common.Business.CustomReport</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/CustomReport/Signal.cs, line 40 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_SignalModel  
**Enclosing Method:** set\_SignalModel()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/CustomReport/Signal.cs:40  
**Taint Flags:**

```

37
38 public List<int> EventCodes { get; set; }
39
  
```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
--	-------------

**Package:** MOE.Common.Business.CustomReport

<b>Projects/Github/ATSPM/MOE.Common/Business/CustomReport/Signal.cs, line 40 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

```

40 public Models.Signal SignalModel { get; set; }
41
42 private void GetPhases(int startOfCycle)
43 {

```

<b>Projects/Github/ATSPM/MOE.Common/Business/CustomReport/Phase.cs, line 52 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/CustomReport/Phase.cs:52  
**Taint Flags:**

```

49
50 public List<Cycle> Cycles { get; set; } = new List<Cycle>();
51
52 public Approach Approach { get; set; }
53
54 public string SignalID { get; set; }
55

```

**Package:** MOE.Common.Business.TMC

<b>Projects/Github/ATSPM/MOE.Common/Business/TMC/TMCMetric.cs, line 37 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details





<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business.TMC</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/TMC/TMCMetric.cs, line 37 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

**Sink:** Function: set\_Options

**Enclosing Method:** set\_Options()

**File:** Projects/Github/ATSPM/MOE.Common/Business/TMC/TMCMetric.cs:37

**Taint Flags:**

```

34 laneType, movementType, options, tmcInfo);
35 }
36
37 public TMCOptions Options { get; set; }
38
39 private void CreatAndAddLegend(Chart chart)
40 {

```

<b>Package: MOE.Common.Business.TimingAndActuations</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/TimingAndActuations/TimingAndActuationsForPhase.cs, line 12 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**yxing:** Thu Apr 11 2019 11:44:37 GMT-0600 (MDT)

These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach

**Enclosing Method:** set\_Approach()

**File:** Projects/Github/ATSPM/MOE.Common/Business/TimingAndActuations/TimingAndActuationsForPhase.cs:12

**Taint Flags:**

```

9 public class TimingAndActuationsForPhase
10 {
11 public readonly int PhaseNumber;
12 public Approach Approach { get; set; }
13 public List<Plan> Plans { get; set; }
14 public string PhaseNumberSort { get; set; }
15 public bool GetPermissivePhase { get; }

```

<b>Projects/Github/ATSPM/MOE.Common/Business/TimingAndActuations/TimingAndActuationsGlobalGetData.cs, line 15 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business.TimingAndActuations</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/TimingAndActuations/TimingAndActuationsGlobalGetData.cs, line 15 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**yxing:** Thu Apr 11 2019 11:44:45 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/TimingAndActuations/TimingAndActuationsGlobalGetData.cs:15  
**Taint Flags:**

```

12 {
13     public Dictionary<string, List<Controller_Event_Log>> GlobalCustomEvents { get; set; }
14     public TimingAndActuationsOptions Options { get; }
15     public Approach Approach { get; set; }
16     public string SignalId { get; }
17
18     public TimingAndActuationsGlobalGetData(string signalId, TimingAndActuationsOptions
options)

```

<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 103 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_MetricType  
**Enclosing Method:** set\_MetricType()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:103  
**Taint Flags:**

100



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 103 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

```

101 public List<XmlDocument> XMLMetricData { get; protected set; } = new List<XmlDocument>();
102
103 public MetricType MetricType { get; set; }
104
105 [DataMember]
106 public List<string> ReturnList { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/PCDOptions.cs, line 77 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details

Kingdom: API Abuse  
Scan Engine: SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

dlowe@utah.gov: Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

Sink: Function: set\_Signal  
Enclosing Method: set\_Signal()  
File: Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/PCDOptions.cs:77  
Taint Flags:

```

74
75 [DataMember] public bool ShowArrivalsOnGreen { get; set; }
76
77 public Models.Signal Signal { get; set; }
78
79 public void SetDefaults()
80 {

```

<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/DetectorAggregation.cs, line 21 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

Kingdom: API Abuse  
Scan Engine: SCA (Structural)

#### Audit Details

Analysis Not an Issue



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/DetectorAggregation.cs, line 21 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

**dlowe@utah.gov:** Wed Aug 01 2018 10:53:12 GMT-0600 (MDT)  
We do not want nullable dates in the database

#### Sink Details

**Sink:** Function: set\_Detector  
**Enclosing Method:** set\_Detector()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/DetectorAggregation.cs:21  
**Taint Flags:**

```

18 [Required]
19 public int DetectorPrimaryId { get; set; }
20
21 public virtual Detector Detector { get; set; }
22
23 [Required]
24 public int Volume { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachYellowRedActivationsAggregation.cs, line 20 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachYellowRedActivationsAggregation.cs:20  
**Taint Flags:**

```

17 [Required]
18 public int ApproachId { get; set; }
19
20 public virtual Approach Approach { get; set; }
21
22 [Required]
23 public int SevereRedLightViolations { get; set; }

```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/PriorityAggregation.cs, line 24 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Signal  
**Enclosing Method:** set\_Signal()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/PriorityAggregation.cs:24  
**Taint Flags:**

```

21 [ForeignKey("Signal")]
22 public int VersionId { get; set; }
23
24 public virtual Signal Signal { get; set; }
25
26 [Required]
27 public int PriorityNumber { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/Detector.cs, line 120 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_DetectionHardware  
**Enclosing Method:** set\_DetectionHardware()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/Detector.cs:120  
**Taint Flags:**

```

117
118 [Display(Name = "Detection Hardware")]
119 [DataMember]
120 public virtual DetectionHardware DetectionHardware { get; set; }
121

```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
--	-------------

**Package:** MOE.Common.Models

<b>Projects/Github/ATSPM/MOE.Common/Models/Detector.cs, line 120 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

```
122 [NotMapped]
123 public string Description
```

<b>Projects/Github/ATSPM/MOE.Common/Models/RoutePhaseDirection.cs, line 15 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_RouteSignal  
**Enclosing Method:** set\_RouteSignal()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/RoutePhaseDirection.cs:15  
**Taint Flags:**

```
12 [Required]
13 public int RouteSignalId { get; set; }
14
15 public RouteSignal RouteSignal { get; set; }
16 public int Phase { get; set; }
17 public int DirectionTypeId { get; set; }
18 public virtual DirectionType Direction { get; set; }
```

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachPcdAggregation.cs, line 20 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachPcdAggregation.cs:20



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachPcdAggregation.cs, line 20 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Taint Flags:

```

17 [Required]
18 public int ApproachId { get; set; }
19
20 public virtual Approach Approach { get; set; }
21
22 [Required]
23 public int ArrivalsOnGreen { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/RouteSignal.cs, line 17 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Route  
**Enclosing Method:** set\_Route()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/RouteSignal.cs:17  
**Taint Flags:**

```

14 [Display(Name = "Route")]
15 public int RouteId { get; set; }
16
17 public virtual Route Route { get; set; }
18
19 [Required]
20 [Display(Name = "Signal Order")]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/Approach.cs, line 30 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/Approach.cs, line 30 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Signal  
**Enclosing Method:** set\_Signal()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/Approach.cs:30  
**Taint Flags:**

```

27 public int VersionID { get; set; }
28
29 [DataMember]
30 public virtual Signal Signal { get; set; }
31
32 [Required]
33 [Display(Name = "Direction")]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/RouteSignal.cs, line 28 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Signal  
**Enclosing Method:** set\_Signal()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/RouteSignal.cs:28  
**Taint Flags:**

```

25 public string SignalId { get; set; }
26
27 [NotMapped]
28 public Signal Signal { get; set; }
29
30 public List<RoutePhaseDirection> PhaseDirections { get; set; }
31 }

```





<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
--	-------------

**Package:** MOE.Common.Models

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachSpeedAggregation.cs, line 20 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)

These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach

**Enclosing Method:** set\_Approach()

**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachSpeedAggregation.cs:20

**Taint Flags:**

```

17 [Required]
18 public int ApproachId { get; set; }
19
20 public virtual Approach Approach { get; set; }
21
22 [Required]
23 public double SummedSpeed { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/Detector.cs, line 88 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse

**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)

These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_LaneType

**Enclosing Method:** set\_LaneType()

**File:** Projects/Github/ATSPM/MOE.Common/Models/Detector.cs:88

**Taint Flags:**

```

85 public int? LaneTypeID { get; set; }
86
87 [DataMember]
88 public virtual LaneType LaneType { get; set; }

```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/Detector.cs, line 88 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

```

89
90 [Display(Name = "Decision Point (Advanced Count)")]
91 [DataMember]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/DetectorComment.cs, line 12 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Detector  
**Enclosing Method:** set\_Detector()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/DetectorComment.cs:12  
**Taint Flags:**

```

9 public int ID { get; set; }
10
11 [DataMember]
12 public virtual Detector Detector { get; set; }
13 }
14 }
15

```

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachSplitFailAggregation.cs, line 20 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachSplitFailAggregation.cs, line 20 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachSplitFailAggregation.cs:20  
**Taint Flags:**

```

17 [Required]
18 public int ApproachId { get; set; }
19
20 public virtual Approach Approach { get; set; }
21
22 [Required]
23 public int SplitFailures { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/Detector.cs, line 112 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/Detector.cs:112  
**Taint Flags:**

```

109 public int ApproachID { get; set; }
110
111 [DataMember]
112 public virtual Approach Approach { get; set; }
113
114 [Display(Name = "Detection Hardware")]
115 [DataMember]

```

<b>Projects/Github/ATSPM/MOE.Common/Models/MetricComment.cs, line 15 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/MetricComment.cs, line 15 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Signal  
**Enclosing Method:** set\_Signal()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/MetricComment.cs:15  
**Taint Flags:**

```

12 public int VersionID { get; set; }
13
14 [DataMember]
15 public virtual Signal Signal { get; set; }
16
17 [DataMember]
18 public string SignalID { get; set; }

```

<b>Projects/Github/ATSPM/MOE.Common/Models/ApproachCycleAggregation.cs, line 20 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Approach  
**Enclosing Method:** set\_Approach()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ApproachCycleAggregation.cs:20  
**Taint Flags:**

```

17 [Required]
18 public int ApproachId { get; set; }
19
20 public virtual Approach Approach { get; set; }
21
22 [Required]
23 public double RedTime { get; set; }

```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/Detector.cs, line 81 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_MovementType  
**Enclosing Method:** set\_MovementType()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/Detector.cs:81  
**Taint Flags:**

```

78 public int? MovementTypeID { get; set; }
79
80 [DataMember]
81 public virtual MovementType MovementType { get; set; }
82
83 [Display(Name = "Lane Type (Lane-by-lane Count)")]
84 [DataMember]
```

<b>Projects/Github/ATSPM/MOE.Common/Models/PreemptionAggregation.cs, line 24 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_Signal  
**Enclosing Method:** set\_Signal()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/PreemptionAggregation.cs:24  
**Taint Flags:**

```

21 [ForeignKey("Signal")]
22 public int VersionId { get; set; }
23
24 public virtual Signal Signal { get; set; }
25
```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
--	-------------

**Package: MOE.Common.Models**

<b>Projects/Github/ATSPM/MOE.Common/Models/PreemptionAggregation.cs, line 24 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
--	-------------

```
26 [Required]
27 public int PreemptNumber { get; set; }
```

**Package: MOE.Common.Models.ViewModel.Chart**

<b>Projects/Github/ATSPM/MOE.Common/Models/ViewModel/Chart/DefaultChartsViewModel.cs, line 51 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_SignalSearch  
**Enclosing Method:** set\_SignalSearch()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ViewModel/Chart/DefaultChartsViewModel.cs:51  
**Taint Flags:**

```
48 public List<SelectListItem> StartAMPMList { get; set; }
49 public List<SelectListItem> EndAMPMList { get; set; }
50 public List<string> ImageLocation { get; set; }
51 public SignalSearchViewModel SignalSearch { get; set; }
52
53 [AllowHtml]
54 public string RunMetricJavascript { get; set; } = string.Empty;
```

**Package: MOE.Common.Models.ViewModel.RouteEdit**

<b>Projects/Github/ATSPM/MOE.Common/Models/ViewModel/RouteEdit/RouteCreateViewModel.cs, line 14 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models.ViewModel.RouteEdit</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/ViewModel/RouteEdit/RouteCreateViewModel.cs, line 14 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Sink Details

**Sink:** Function: set\_Route  
**Enclosing Method:** set\_Route()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ViewModel/RouteEdit/RouteCreateViewModel.cs:14  
**Taint Flags:**

```

11 SignalSelectList = new List<Tuple<string, string>>();
12 }
13
14 public Route Route { get; set; }
15 public RouteMapViewModel RouteMap { get; set; }
16 public List<Tuple<string, string>> SignalSelectList { get; set; }
17 }

```

<b>Package: MOE.Common.Models.ViewModel.WebConfigTool</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/ViewModel/WebConfigTool/WebConfigToolViewModel.cs, line 18 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_SignalSearch  
**Enclosing Method:** set\_SignalSearch()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ViewModel/WebConfigTool/WebConfigToolViewModel.cs:18  
**Taint Flags:**

```

15 SignalSearch = new SignalSearchViewModel(regionRepository, metricRepository);
16 }
17
18 public SignalSearchViewModel SignalSearch { get; set; }
19 }
20 }
21

```



<b>ASP.NET MVC Bad Practices: Optional Submodel With Required Property</b>	<b>High</b>
<b>Package: MOE.Common.Models.ViewModel._MainMenu</b>	
<b>Projects/Github/ATSPM/MOE.Common/Models/ViewModel/_MainMenu/MenuItem.cs, line 33 (ASP.NET MVC Bad Practices: Optional Submodel With Required Property)</b>	<b>High</b>

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 13:45:39 GMT-0600 (MDT)  
 These relationships are required for either partial views or to define a relationship in entity framework

#### Sink Details

**Sink:** Function: set\_MenuObject  
**Enclosing Method:** set\_MenuObject()  
**File:** Projects/Github/ATSPM/MOE.Common/Models/ViewModel/\_MainMenu/MenuItem.cs:33  
**Taint Flags:**

```

30 ExternalLinks = db.ExternalLinks.ToList();
31 }
32
33 public Menu MenuObject { get; set; }
34 public List<MenuItem> SubMenuItems { get; set; }
35 public List<ExternalLink> ExternalLinks { get; set; }
36 public bool IsAdmin { get; set; }

```





## Dangerous Function: xp\_cmdshell (1 issue)

### Abstract

The function `xp_cmdshell` cannot be used safely. It should not be used.

### Explanation

Certain functions behave in dangerous ways regardless of how they are used. The function `xp_cmdshell` launches a Windows command shell to execute the provided command string. The command executes either in the default system or a provided proxy context. However, there is no way to limit a user to prespecified set of privileged operations and any privilege grant opens up the user to execute any command string.

### Recommendation

Any privileged operations that need to be performed should be exposed in a way that limits access. Possible alternatives are external assemblies that perform only the necessary actions or stored procedures that make use of impersonation contexts.

### Issue Summary

### Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
Dangerous Function: xp_cmdshell	1	0	0	1
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>

<b>Dangerous Function: xp_cmdshell</b>	<b>Critical</b>
<b>Package: dbo</b>	
<b>Projects/Github/ATSPM/MOE.Common/Migrations/PreserveData.sql, line 77 (Dangerous Function: xp_cmdshell)</b>	<b>Critical</b>
<b>Issue Details</b>	
<b>Kingdom:</b> API Abuse <b>Scan Engine:</b> SCA (Semantic)	
<b>Audit Details</b>	
Analysis	Suspicious



**Dangerous Function: xp\_cmdshell**

**Critical**

**Package: dbo**

**Projects/Github/ATSPM/MOE.Common/Migrations/PreserveData.sql, line 77  
(Dangerous Function: xp\_cmdshell)**

**Critical**

#### Audit Comments

**dlowe:** Fri Jan 04 2019 11:24:38 GMT-0700 (MST)

Currently this is required during the install process. This statement has to run through a dos command to work.  
On the plus side this will only be executed during installs and upgrades

#### Sink Details

**Sink:** xp\_cmdshell()

**Enclosing Method:** preservedata()

**File:** Projects/Github/ATSPM/MOE.Common/Migrations/PreserveData.sql:77

**Taint Flags:**

```
74 @FunctionOrProcedure = 'PreserveData ',
75 @Notes = 'Before bcp Command, plan about ten hours.'
76 END
77 EXEC master..xp_cmdshell @SQLSTATEMENT
78
79 SET @SQLSTATEMENT = 'Truncate TABLE [dbo].[' + @StagingTableName + ']'
80 IF (@Verbose = 1)
```



# JSON Injection (1 issue)

## Abstract

The method writes unvalidated input into JSON. This call could allow an attacker to inject arbitrary elements or attributes into the JSON entity.

## Explanation

JSON injection occurs when: 1. Data enters a program from an untrusted source. 2. The data is written to a JSON stream. Applications typically use JSON to store data or send messages. When used to store data, JSON is often treated like cached data and may potentially contain sensitive information. When used to send messages, JSON is often used in conjunction with a RESTful service and can be used to transmit sensitive information such as authentication credentials. The semantics of JSON documents and messages can be altered if an application constructs JSON from unvalidated input. In a relatively benign case, an attacker may be able to insert extraneous elements that cause an application to throw an exception while parsing a JSON document or request. In a more serious case, such as that involving JSON injection, an attacker may be able to insert extraneous elements that allow for the predictable manipulation of business critical values within a JSON document or request. In some cases, JSON injection can lead to cross-site scripting or dynamic code evaluation. **Example 1:** The following C# code uses JSON.NET to serialize user account authentication information for non-privileged users (those with a role of "default" as opposed to privileged users with a role of "admin") from user-controlled input variables `username` and `password` to the JSON file located at `C:\user_info.json`:

...

```
StringBuilder sb = new StringBuilder();
StringWriter sw = new StringWriter(sb);

using (JsonWriter writer = new JsonTextWriter(sw))
{
    writer.Formatting = Formatting.Indented;

    writer.WriteStartObject();

    writer.WritePropertyName("role");
    writer.WriteRawValue("\"default\"");

    writer.WritePropertyName("username");
    writer.WriteRawValue("\"" + username + "\"");

    writer.WritePropertyName("password");
    writer.WriteRawValue("\"" + password + "\"");

    writer.WriteEndObject();
}
```

```
File.WriteAllText(@"C:\user_info.json", sb.ToString());
```

Yet, because the JSON serialization is performed using `JsonWriter.WriteRawValue()`, the untrusted data in `username` and `password` will not be validated to escape JSON-related special characters. This allows a user to arbitrarily insert JSON keys, possibly changing the structure of the serialized JSON. In this example, if the non-privileged user `mallory` with password `Evil123!` were to append

`", "role": "admin"` to her username when entering it at the prompt that sets the value of the `username` variable, the resulting JSON saved to `C:\user_info.json` would be:

```
{
  "role": "default",
  "username": "mallory",
```



```

    "role": "admin",
    "password": "Evil123!"
}

```

If this serialized JSON file were then deserialized to a Dictionary object with `JsonConvert.DeserializeObject()` as so:

```
String jsonString = File.ReadAllText(@"C:\user_info.json");
```

```
Dictionary<string, string> userInfo =
JsonConvert.DeserializeObject<Dictionary<string, string>>(jsonString);
```

The resulting values for the `username`, `password`, and `role` keys in the Dictionary object would be `mallory`, `Evil123!`, and `admin` respectively. Without further verification that the deserialized JSON values are valid, the application will incorrectly assign user `mallory` "admin" privileges.

## **Recommendation**

When writing user supplied data to JSON some guidelines should be followed: 1. Don't create JSON attributes whose names are derived from user input. 2. Ensure that all serialization to JSON is performed using a safe serialization function that delimits untrusted data within single or double quotes and escapes any special characters. **Example 2:** The following C# code implements the same functionality as that in Example 1, but instead uses `JsonWriter.WriteValue()` rather than `JsonWriter.WriteRawValue()` to serialize the data, therefore ensuring that any untrusted data is properly delimited and escaped:

...

```

StringBuilder sb = new StringBuilder();
StringWriter sw = new StringWriter(sb);

using (JsonWriter writer = new JsonTextWriter(sw))
{
    writer.Formatting = Formatting.Indented;

    writer.WriteStartObject();

    writer.WritePropertyName("role");
    writer.WriteValue("default");

    writer.WritePropertyName("username");
    writer.WriteValue(username);

    writer.WritePropertyName("password");
    writer.WriteValue(password);

    writer.WriteEndObject();
}

File.WriteAllText(@"C:\user_info.json", sb.ToString());

```

## **Issue Summary**



## Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
JSON Injection	1	0	0	1
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>

### JSON Injection

Critical

Package: SPM.Controllers

Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 111  
(JSON Injection)

Critical

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:21:14 GMT-0600 (MDT)  
This response comes directly from google and is not exposed to the front end.

#### Source Details

**Source:** System.Net.WebClient.DownloadString()  
**From:** SPM.Controllers.DataExportController.GetReCaptchaStatus  
**File:** Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs:109

```
106 #endif
107 string secretKey = settings.ReCaptchaSecretKey;
108 var client = new WebClient();
109 var result = client.DownloadString(
110     $"https://www.google.com/recaptcha/api/siteverify?secret={secretKey}&response={response}&remoteip={userIp}");
111 var obj = JObject.Parse(result);
112 var status = (bool)obj.SelectToken("success");
```

#### Sink Details

**Sink:** Newtonsoft.Json.Linq.JObject.Parse()  
**Enclosing Method:** GetReCaptchaStatus()



## JSON Injection

Critical

Package: SPM.Controllers

Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 111  
(JSON Injection)

Critical

File: Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs:111

Taint Flags: WEB, XSS

```
108 var client = new WebClient();
109 var result = client.DownloadString(
110     $"https://www.google.com/recaptcha/api/siteverify?secret={secretKey}&response={response}&remoteip={userIp}");
111 var obj = JObject.Parse(result);
112 var status = (bool)obj.SelectToken("success");
113 return status;
114 }
```



## Mass Assignment: Insecure Binder Configuration (52 issues)

### Abstract

The framework binder used for binding the HTTP request parameters to the model class has not been explicitly configured to allow, or disallow, certain attributes.

### Explanation

To ease development and increase productivity, most modern frameworks allow an object to be automatically instantiated and populated with the HTTP request parameters whose names match an attribute of the class to be bound. Automatic instantiation and population of objects speeds up development, but can lead to serious problems if implemented without caution. Any attribute in the bound classes, or nested classes, will be automatically bound to the HTTP request parameters. Therefore, malicious users will be able to assign a value to any attribute in bound or nested classes, even if they are not exposed to the client through web forms or API contracts. **Example 1:** With no additional configuration, the following ASP.NET MVC controller method will bind the HTTP request parameters to any attribute in the `RegisterModel` or `Details` classes:

```
public ActionResult Register(RegisterModel model)
{
    if (ModelState.IsValid)
    {
        try
        {
            return RedirectToAction("Index", "Home");
        }
        catch (MembershipCreateUserException e)
        {
            ModelState.AddModelError("", "");
        }
    }
    return View(model);
}
```

Where `RegisterModel` class is defined as:

```
public class RegisterModel
{
    [Required]
    [Display(Name = "User name")]
    public string UserName { get; set; }

    [Required]
    [DataType(DataType.Password)]
    [Display(Name = "Password")]
    public string Password { get; set; }

    [DataType(DataType.Password)]
    [Display(Name = "Confirm password")]
    public string ConfirmPassword { get; set; }

    public Details Details { get; set; }

    public RegisterModel()
    {
        Details = new Details();
    }
}
```



and Details class is defined as:

```
public class Details
{
    public Details()
    {
        IsAdmin = false;
    }
    public bool IsAdmin { get; set; }
    ...
}
```

**Example 2:** When using TryUpdateModel() or UpdateModel() in ASP.NET MVC or Web API applications, the model binder will automatically try to bind all HTTP request parameters by default:

```
public ActionResult Register()
{
    var model = new RegisterModel();
    TryUpdateModel<RegisterModel>(model);
    return View("detail", model);
}
```

**Example 3:** In ASP.NET Web API applications, the model binder will automatically try to bind all HTTP request parameters by default using the configured JSON or XML serializer/deserializer. By default, the binder will try to bind all possible attributes from the HTTP request parameters or body:

```
public class ProductsController : ApiController
{
    public string SaveProduct([FromBody] Product p)
    {
        return p.Name;
    }
    ...
}
```

**Example 4:** In ASP.NET Web Form applications, the model binder will automatically try to bind all HTTP request parameters when using TryUpdateModel() or UpdateModel() with IValueProvider interface.

```
Employee emp = new Employee();
TryUpdateModel(emp, new
System.Web.ModelBinding.FormValueProvider(ModelBindingExecutionContext));
if (ModelState.IsValid)
{
    db.SaveChanges();
}
```

and Employee class is defined as:

```
public class Employee
{
    public Employee()
    {
        IsAdmin = false;
        IsManager = false;
    }
    public string Name { get; set; }
    public string Email { get; set; }
    public bool IsManager { get; set; }
    public bool IsAdmin { get; set; }
}
```

## **Recommendation**

When using frameworks that provide automatic model binding capabilities, it is a best practice to control which attributes will be bound to the model object so that even if attackers are able to identify other non-exposed attributes of the model or nested classes, they will not be able to bind arbitrary values from HTTP





request parameters. Depending on the framework used there will be different ways to control the model binding process: **Example 5:** It is possible to control the ASP.NET MVC model binding process using the

`[Bind]` attribute:

```
[Bind(Exclude = "IsAdmin")]
public class Details
{
    public Details()
    {
        IsAdmin = false;
    }
    public bool IsAdmin { get; set; }
    ...
}
```

**Example 6:** When using `TryUpdateModel()` or `UpdateModel()` in ASP.NET MVC or Web API applications, an additional string array can be passed to specify the allowed or disallowed attributes:

```
public ActionResult Register()
{
    var model = new RegisterModel();
    String[] array = new String[] { "FirstName" };
    TryUpdateModel<RegisterModel>(model, array);
    return View("detail", model);
}
```

**Example 7:** In ASP.NET Web API applications, the model classes bound to the HTTP request parameters can be annotated to control the binding process. For example, if the application is using JSON.NET for JSON serialization, the `[JsonIgnore]` attribute can be used to ignore certain attributes that should not be included in the serialization/deserialization process:

```
public class Details
{
    public Details()
    {
        IsAdmin = false;
    }
    [JsonIgnore]
    public bool IsAdmin { get; set; }
    ...
}
```

**Example 8:** In ASP.NET Web Form applications, this issue can be prevented using appropriate use of `[BindNever]` attribute, available under `System.Web.ModelBinding` namespace.

```
public class Employee
{
    public Employee()
    {
        IsAdmin = false;
        IsManager = false;
    }
    public string Name { get; set; }
    public string Email { get; set; }

    [BindNever]
    public bool IsManager { get; set; }
    [BindNever]
    public bool IsAdmin { get; set; }
}
```

A different approach to protecting against mass assignment vulnerabilities is using a layered architecture where the HTTP request parameters are bound to DTO objects. The DTO objects are only used for that purpose, exposing only those attributes defined in the web forms or API contracts, and then mapping these DTO objects to Domain objects where the rest of the private attributes can be defined.

## Issue Summary

### Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
Mass Assignment: Insecure Binder Configuration	52	0	0	52
<b>Total</b>	<b>52</b>	<b>0</b>	<b>0</b>	<b>52</b>

#### Mass Assignment: Insecure Binder Configuration

High

Package: SPM.Controllers

Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 494  
(Mass Assignment: Insecure Binder Configuration)

High

#### Issue Details

Kingdom: API Abuse

Scan Engine: SCA (Structural)

#### Audit Details

Analysis

Bad Practice

#### Sink Details

Sink: Variable: metricOptions

Enclosing Method: GetAoRMetric()

File: Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:494

Taint Flags:

```
491 return PartialView("AoROptions", aoROptions);
492 }
493
494 public ActionResult GetAoRMetric(AoROptions metricOptions)
495 {
496     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
497     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 154 (Mass Assignment: Insecure Binder Configuration)

High

#### Issue Details

Kingdom: API Abuse

Scan Engine: SCA (Structural)



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 154 (Mass Assignment: Insecure Binder Configuration)****High****Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Variable: dataExportViewModel**Enclosing Method:** GetRecordCount()**File:** Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs:154**Taint Flags:**

```
151 return processedCodes;
152 }
153
154 public ActionResult GetRecordCount(DataExportViewModel dataExportViewModel)
155 {
156     if (ModelState.IsValid)
157     {
```

**Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 545 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:33:31 GMT-0600 (MDT)

This code is from Microsoft. Need to investigate what properties to bind to.

**Sink Details****Sink:** Variable: model**Enclosing Method:** SendCode()**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:545**Taint Flags:**

```
542 [HttpPost]
543 [AllowAnonymous]
544 [ValidateAntiForgeryToken]
545 public async Task<ActionResult> SendCode(SendCodeViewModel model)
546 {
547     if (!ModelState.IsValid)
548     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 446 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details**

**Mass Assignment: Insecure Binder Configuration****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 446**  
**(Mass Assignment: Insecure Binder Configuration)****High****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetApproachSpeedMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:446**Taint Flags:**

```
443 return PartialView("ApproachSpeedOptions", approachSpeedOptions);
444 }
445
446 public ActionResult GetApproachSpeedMetric(ApproachSpeedOptions metricOptions)
447 {
448     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
449     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 34**  
**(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: ssvm**Enclosing Method:** SignalSearch()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:34**Taint Flags:**

```
31 }
32 }
33
34 public ActionResult SignalSearch(SignalSearchViewModel ssvm)
35 {
36     return PartialView("SignalSearch", ssvm);
37 }
```

**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 162 (Mass**  
**Assignment: Insecure Binder Configuration)****High****Issue Details**

**Mass Assignment: Insecure Binder Configuration****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 162 (Mass Assignment: Insecure Binder Configuration)****High****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: lpvm**Enclosing Method:** LinkPivotPCDOptions()**File:** Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs:162**Taint Flags:**

```
159 return View(lpvm);
160 }
161 [HttpPost]
162 public ActionResult LinkPivotPCDOptions(MOE.Common.Models.ViewModel.LinkPivotViewModel lpvm)
163 {
164     if (ModelState.IsValid)
165     {
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 624 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetTimingAndActuations()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:624**Taint Flags:**

```
621 return PartialView("MetricResult", result);
622 }
623
624 public ActionResult GetTimingAndActuations (TimingAndActuationsOptions metricOptions)
625 {
626     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
627     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 485 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details**

**Mass Assignment: Insecure Binder Configuration****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 485 (Mass Assignment: Insecure Binder Configuration)****High****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:33:31 GMT-0600 (MDT)

This code is from Microsoft. Need to investigate what properties to bind to.

**Sink Details****Sink:** Variable: model**Enclosing Method:** ResetPassword()**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:485**Taint Flags:**

```
482 [HttpPost]
483 [AllowAnonymous]
484 [ValidateAntiForgeryToken]
485 public async Task<ActionResult> ResetPassword(ResetPasswordViewModel model)
486 {
487     if (!ModelState.IsValid)
488     {
```

**Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs, line 554 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: signal**Enclosing Method:** Edit()**File:** Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs:554**Taint Flags:**

```
551 [HttpPost]
552 [ValidateAntiForgeryToken]
553 [Authorize(Roles = "Admin, Configuration")]
554 public ActionResult Edit(Signal signal)
555 {
556     try
557     {
```



**Mass Assignment: Insecure Binder Configuration****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 390 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:33:31 GMT-0600 (MDT)

This code is from Microsoft. Need to investigate what properties to bind to.

**Sink Details****Sink:** Variable: model**Enclosing Method:** Register()**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:390**Taint Flags:**

```
387 [HttpPost]
388 [AllowAnonymous]
389 [ValidateAntiForgeryToken]
390 public async Task<ActionResult> Register(RegisterViewModel model)
391 {
392     if (ModelState.IsValid)
393     {
```

**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 51 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Variable: lpvm**Enclosing Method:** LinkPivotResult()**File:** Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs:51**Taint Flags:**

```
48 return PartialView("FillSignals", signals);
49 }
50
51 public ActionResult LinkPivotResult(MOE.Common.Models.ViewModel.LinkPivotViewModel lpvm)
52 {
53     if (ModelState.IsValid)
54     {
```



**Mass Assignment: Insecure Binder Configuration****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 204 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetPreemptMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:204**Taint Flags:**

```
201 return View("Index", defaultChartsViewModel);
202 }
203
204 public ActionResult GetPreemptMetricByUrl(MetricOptions metricOptions)
205 {
206     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
207     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 352 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:33:31 GMT-0600 (MDT)

This code is from Microsoft. Need to investigate what properties to bind to.

**Sink Details****Sink:** Variable: model**Enclosing Method:** VerifyCode()**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:352**Taint Flags:**

```
349 [HttpPost]
350 [AllowAnonymous]
351 [ValidateAntiForgeryToken]
352 public async Task<ActionResult> VerifyCode(VerifyCodeViewModel model)
353 {
354     if (!ModelState.IsValid)
355     {
```





**Mass Assignment: Insecure Binder Configuration****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 149**  
**(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** TimingAndActionResultByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:149**Taint Flags:**

```
146 "); CreateMetric();";
147 return View("Index", defaultChartsViewModel);
148 }
149 public ActionResult TimingAndActionResultByUrl(TimingAndActuationsOptions metricOptions)
150 {
151     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
152     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 441 (Mass**  
**Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:33:31 GMT-0600 (MDT)

This code is from Microsoft. Need to investigate what properties to bind to.

**Sink Details****Sink:** Variable: model**Enclosing Method:** ForgotPassword()**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:441**Taint Flags:**

```
438 [HttpPost]
439 [AllowAnonymous]
440 [ValidateAntiForgeryToken]
441 public async Task<ActionResult> ForgotPassword(ForgotPasswordViewModel model)
442 {
443     if (ModelState.IsValid)
444     {
```



**Mass Assignment: Insecure Binder Configuration****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 292 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:33:31 GMT-0600 (MDT)

This code is from Microsoft. Need to investigate what properties to bind to.

**Sink Details****Sink:** Variable: model**Enclosing Method:** Login()**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:292**Taint Flags:**

```
289 [HttpPost]
290 [AllowAnonymous]
291 [ValidateAntiForgeryToken]
292 public async Task<ActionResult> Login(LoginViewModel model, string returnUrl)
293 {
294     if (returnUrl == null)
295     {
```

**Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs, line 59 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis                      Bad Practice

**Sink Details****Sink:** Variable: ssvm**Enclosing Method:** RouteMap()**File:** Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs:59**Taint Flags:**

```
56 return PartialView("RouteInfoBox", viewModel);
57 }
58
59 public ActionResult RouteMap(MOE.Common.Models.ViewModel.Chart.SignalSearchViewModel ssvm)
60 {
61     return PartialView(ssvm);
62 }
```



**Mass Assignment: Insecure Binder Configuration****High****Package:** SPM.Controllers**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 806  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetSplitMonitorMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:806**Taint Flags:**

```
803 return PartialView("GetApproachVolumeMetric", viewModel);
804 }
805
806 public ActionResult GetSplitMonitorMetric(SplitMonitorOptions metricOptions)
807 {
808     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
809     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 598 (Mass  
Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:33:31 GMT-0600 (MDT)

This code is from Microsoft. Need to investigate what properties to bind to.

**Sink Details****Sink:** Variable: model**Enclosing Method:** ExternalLoginConfirmation()**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:598**Taint Flags:**

```
595 [HttpPost]
596 [AllowAnonymous]
597 [ValidateAntiForgeryToken]
598 public async Task<ActionResult>
ExternalLoginConfirmation(ExternalLoginConfirmationViewModel model, string returnUrl)
599 {
600     if (User.Identity.IsAuthenticated)
601     {
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 598 (Mass Assignment: Insecure Binder Configuration)****High****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 711 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetTMCMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:711**Taint Flags:**

```
708 return PartialView("TMCOptions", tMCOptions);
709 }
710
711 public ActionResult GetTMCMetric(TMCOptions metricOptions)
712 {
713     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
714     MOE.Common.Business.TMC.TMCInfo tmcInfo = new MOE.Common.Business.TMC.TMCInfo();
```

**Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 185 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: pcdOptions**Enclosing Method:** PCDs()**File:** Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs:185**Taint Flags:**

```
182 return Content("Invalid Parameters");
183 }
184
185 public ActionResult PCDs(MOE.Common.Models.ViewModel.LinkPivotPCDOptions pcdOptions)
186 {
187     if (ModelState.IsValid)
188     {
```



<b>Mass Assignment: Insecure Binder Configuration</b>	<b>High</b>
<b>Package: SPM.Controllers</b>	
<b>Projects/Github/ATSPM/SPM/Controllers/LinkPivotController.cs, line 185 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
<b>Issue Details</b>	
<b>Kingdom:</b> API Abuse <b>Scan Engine:</b> SCA (Structural)	
<b>Audit Details</b>	
Analysis	Bad Practice
<b>Sink Details</b>	
<b>Sink:</b> Variable: generalSettings <b>Enclosing Method:</b> Edit() <b>File:</b> Projects/Github/ATSPM/SPM/Controllers/GeneralSettingsController.cs:36 <b>Taint Flags:</b>	
<pre> 33 // more details see http://go.microsoft.com/fwlink/?LinkId=317598. 34 [HttpPost] 35 [ValidateAntiForgeryToken] 36 public ActionResult Edit(GeneralSettings generalSettings) 37 { 38     if (ModelState.IsValid) 39     { </pre>	
<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 195 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
<b>Issue Details</b>	
<b>Kingdom:</b> API Abuse <b>Scan Engine:</b> SCA (Structural)	
<b>Audit Details</b>	
Analysis	Bad Practice
<b>Sink Details</b>	
<b>Sink:</b> Variable: metricOptions <b>Enclosing Method:</b> GetPedDelayMetricByUrl() <b>File:</b> Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:195 <b>Taint Flags:</b>	
<pre> 192 return View("Index", defaultChartsViewModel); 193 } 194 195 public ActionResult GetPedDelayMetricByUrl(PedDelayOptions metricOptions) 196 { 197     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel(); 198     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions); </pre>	



<b>Mass Assignment: Insecure Binder Configuration</b>	<b>High</b>
<b>Package: SPM.Controllers</b>	
<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 195 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
<b>Issue Details</b>	
<b>Kingdom:</b> API Abuse <b>Scan Engine:</b> SCA (Structural)	
<b>Audit Details</b>	
Analysis	Bad Practice
<b>Sink Details</b>	
<b>Sink:</b> Variable: metricOptions <b>Enclosing Method:</b> GetSplitFailMetric() <b>File:</b> Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:399 <b>Taint Flags:</b>	
<pre> 396 return PartialView("SplitFailOptions", splitFailOptions); 397 } 398 399 public ActionResult GetSplitFailMetric(SplitFailOptions metricOptions) 400 { 401     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID); 402     Models.MetricResultViewModel result = new Models.MetricResultViewModel(); </pre>	
<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 295 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
<b>Issue Details</b>	
<b>Kingdom:</b> API Abuse <b>Scan Engine:</b> SCA (Structural)	
<b>Audit Details</b>	
Analysis	Bad Practice
<b>Sink Details</b>	
<b>Sink:</b> Variable: metricOptions <b>Enclosing Method:</b> GetYRAMetricByUrl() <b>File:</b> Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:295 <b>Taint Flags:</b>	
<pre> 292 return View("Index", defaultChartsViewModel); 293 } 294 295 public ActionResult GetYRAMetricByUrl(YellowAndRedOptions metricOptions) 296 { 297     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel(); 298     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions); </pre>	



<b>Mass Assignment: Insecure Binder Configuration</b>	<b>High</b>
---	-------------

**Package:** SPM.Controllers

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 295 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
--	-------------

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 240 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis                      Bad Practice

#### Sink Details

**Sink:** Variable: metricOptions  
**Enclosing Method:** GetApproachVolumeMetricByUrl()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:240  
**Taint Flags:**

```
237 return View("Index", defaultChartsViewModel);
238 }
239
240 public ActionResult GetApproachVolumeMetricByUrl(ApproachVolumeOptions metricOptions)
241 {
242     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();
243     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 890 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis                      Bad Practice

#### Sink Details

**Sink:** Variable: metricOptions  
**Enclosing Method:** GetPCDMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:890  
**Taint Flags:**

```
887 return PartialView("MetricResult", result);
888 }
889
890 public ActionResult GetPCDMetric(PCDOptions metricOptions)
891 {
892     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);
893     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```



<b>Mass Assignment: Insecure Binder Configuration</b>	<b>High</b>
<b>Package: SPM.Controllers</b>	
<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 890 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>

<b>Projects/Github/ATSPM/SPM/Controllers/DatabaseArchiveSettingsController.cs, line 46 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis                      Bad Practice

#### Sink Details

**Sink:** Variable: archiveSettingsViewModel  
**Enclosing Method:** Edit()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DatabaseArchiveSettingsController.cs:46  
**Taint Flags:**

```

43 // more details see https://go.microsoft.com/fwlink/?LinkId=317598.
44 [HttpPost]
45 [ValidateAntiForgeryToken]
46 public ActionResult
47     Edit(MOE.Common.Models.ViewModel.DatabaseArchive.ArchiveSettingsViewModel
48     archiveSettingsViewModel)
49 {
48 if (ModelState.IsValid)
49 {

```

<b>Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 764 (Mass Assignment: Insecure Binder Configuration)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis                      Bad Practice

#### Sink Details

**Sink:** Variable: metricOptions  
**Enclosing Method:** GetApproachVolumeMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:764  
**Taint Flags:**

```

761 return PartialView("ApproachVolumeOptions", approachVolumeOptions);
762 }
763
764 public ActionResult GetApproachVolumeMetric(ApproachVolumeOptions metricOptions)
765 {
766 MOE.Common.Models.Repositories.IApplicationEventRepository logRepository =

```





**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 764  
(Mass Assignment: Insecure Binder Configuration)****High**

```
MOE.Common.Models.Repositories.ApplicationEventRepositoryFactory.Create();  
767 MOE.Common.Business.ApproachVolume.ApproachVolumeViewModel viewModel = new  
ApproachVolumeViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 660  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Variable: metricOptions  
**Enclosing Method:** GetPreemptMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:660  
**Taint Flags:**

```
657 return PartialView("MetricResult", result);  
658 }  
659  
660 public ActionResult GetPreemptMetric(MetricOptions metricOptions)  
661 {  
662 Models.MetricResultViewModel result = new Models.MetricResultViewModel();  
663
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 138  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Variable: metricOptions  
**Enclosing Method:** GetPhaseTerminationMetricByUrl()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:138  
**Taint Flags:**

```
135 }  
136 }  
137  
138 public ActionResult GetPhaseTerminationMetricByUrl(PhaseTerminationOptions metricOptions)
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 138  
(Mass Assignment: Insecure Binder Configuration)****High**

```
139 {  
140     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
141     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 256  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetApproachDelayMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:256**Taint Flags:**

```
253     return View("Index", defaultChartsViewModel);  
254 }  
255  
256 public ActionResult GetApproachDelayMetricByUrl(ApproachDelayOptions metricOptions)  
257 {  
258     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
259     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 226  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetPCDMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:226**Taint Flags:**

```
223     return View("Index", defaultChartsViewModel);  
224 }  
225  
226 public ActionResult GetPCDMetricByUrl(PCDOptions metricOptions)
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 226  
(Mass Assignment: Insecure Binder Configuration)****High**

```
227 {  
228     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
229     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 313  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetSplitFailMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:313**Taint Flags:**

```
310     return View("Index", defaultChartsViewModel);  
311 }  
312  
313 public ActionResult GetSplitFailMetricByUrl(SplitFailOptions metricOptions)  
314 {  
315     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
316     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 343  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetYellowAndRedMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:343**Taint Flags:**

```
340     return PartialView("YellowAndRedOptions", yellowAndRedOptions);  
341 }  
342  
343 public ActionResult GetYellowAndRedMetric(YellowAndRedOptions metricOptions)
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 343  
(Mass Assignment: Insecure Binder Configuration)****High**

```
344 {  
345     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
346     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 585  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Variable: metricOptions  
**Enclosing Method:** GetPhaseTerminationMetric()  
**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:585  
**Taint Flags:**

```
582     return PartialView("PhaseTerminationOptions", phaseTerminationOptions);  
583 }  
584  
585 public ActionResult GetPhaseTerminationMetric(PhaseTerminationOptions metricOptions)  
586 {  
587     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
588     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs, line 132  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details**

**Kingdom:** API Abuse  
**Scan Engine:** SCA (Structural)

**Audit Details**

Analysis                      Bad Practice

**Sink Details**

**Sink:** Variable: routePhaseDirection  
**Enclosing Method:** UpdateApproach()  
**File:** Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs:132  
**Taint Flags:**

```
129     [Authorize(Roles = "Configuration, Admin")]  
130     [HttpPost]  
131     [ValidateJsonAntiForgeryToken]  
132     public void UpdateApproach(RoutePhaseDirection routePhaseDirection)
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/RouteSignalsController.cs, line 132 (Mass Assignment: Insecure Binder Configuration)****High**

```
133 {  
134 if (ModelState.IsValid)  
135 {
```

**Projects/Github/ATSPM/SPM/Controllers/AggregateDataExportController.cs, line 79 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: aggDataExportViewModel**Enclosing Method:** CreateMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/AggregateDataExportController.cs:79**Taint Flags:**

```
76 // POST: AggDataExportViewModel  
77 [HttpPost]  
78 [ValidateAntiForgeryToken]  
79 public ActionResult CreateMetric(AggDataExportViewModel aggDataExportViewModel)  
80 {  
81 switch (aggDataExportViewModel.SelectedMetricTypeId)  
82 {
```

**Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs, line 336 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: signal**Enclosing Method:** CopyVersion()**File:** Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs:336**Taint Flags:**

```
333 [HttpPost]  
334 [ValidateJsonAntiForgeryToken]  
335 [Authorize(Roles = "Admin, Configuration")]  
336 public ActionResult CopyVersion(Signal signal)
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/SignalsController.cs, line 336 (Mass Assignment: Insecure Binder Configuration)****High**

```
337 {  
338  
339 //originalSignalVersion = SetDetectionTypes(originalSignalVersion);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 76 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: dcv**Enclosing Method:** GetMap()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:76**Taint Flags:**

```
73 MetricsListViewModel mlv = new MetricsListViewModel(signalID, selectedMetricID);  
74 return PartialView("GetMetricsList", mlv);  
75 }  
76 public ActionResult GetMap(DefaultChartsViewModel dcv)  
77 {  
78 return PartialView("Map", dcv);  
79 }
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 179 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetSplitMonitorMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:179**Taint Flags:**

```
176 return View("Index", defaultChartsViewModel);  
177 }  
178  
179 public ActionResult GetSplitMonitorMetricByUrl(SplitMonitorOptions metricOptions)
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 179  
(Mass Assignment: Insecure Binder Configuration)****High**

```
180 {  
181     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
182     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 213  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetTMCMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:213**Taint Flags:**

```
210     return View("Index", defaultChartsViewModel);  
211 }  
212  
213 public ActionResult GetTMCMetricByUrl(TMCOptions metricOptions)  
214 {  
215     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
216     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 855  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetPedDelayMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:855**Taint Flags:**

```
852     return PartialView("PedDelayOptions", pedDelayOptions);  
853 }  
854  
855 public ActionResult GetPedDelayMetric(PedDelayOptions metricOptions)
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 855 (Mass Assignment: Insecure Binder Configuration)****High**

```
856 {  
857     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
858     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/SPMUsersController.cs, line 97 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: sPMUser**Enclosing Method:** Edit()**File:** Projects/Github/ATSPM/SPM/Controllers/SPMUsersController.cs:97**Taint Flags:**

```
94 // more details see http://go.microsoft.com/fwlink/?LinkId=317598.  
95 [HttpPost]  
96 [ValidateAntiForgeryToken]  
97 public ActionResult Edit(Models.UserViewModel sPMUser)  
98 {  
99     if (ModelState.IsValid)  
100 {
```

**Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 41 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: dataExportViewModel**Enclosing Method:** RawDataExport()**File:** Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs:41**Taint Flags:**

```
38 }  
39  
40 [HttpPost]  
41 public ActionResult RawDataExport(DataExportViewModel dataExportViewModel)
```





**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DataExportController.cs, line 41 (Mass Assignment: Insecure Binder Configuration)****High**

```
42 {  
43     string response = Request["g-recaptcha-response"];  
44     bool status = GetReCaptchaStatus(response);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 539 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetApproachDelayMetric()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:539**Taint Flags:**

```
536     return PartialView("ApproachDelayOptions", approachDelayOptions);  
537 }  
538  
539 public ActionResult GetApproachDelayMetric(ApproachDelayOptions metricOptions)  
540 {  
541     metricOptions.MetricType = GetMetricType(metricOptions.MetricTypeID);  
542     Models.MetricResultViewModel result = new Models.MetricResultViewModel();
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 280 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetApproachSpeedMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:280**Taint Flags:**

```
277     return View("Index", defaultChartsViewModel);  
278 }  
279  
280 public ActionResult GetApproachSpeedMetricByUrl(ApproachSpeedOptions metricOptions)
```



**Mass Assignment: Insecure Binder Configuration****High****Package: SPM.Controllers****Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 280  
(Mass Assignment: Insecure Binder Configuration)****High**

```
281 {  
282     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
283     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs, line 269  
(Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: metricOptions**Enclosing Method:** GetAoRMetricByUrl()**File:** Projects/Github/ATSPM/SPM/Controllers/DefaultChartsController.cs:269**Taint Flags:**

```
266     return View("Index", defaultChartsViewModel);  
267 }  
268  
269 public ActionResult GetAoRMetricByUrl(AoROptions metricOptions)  
270 {  
271     DefaultChartsViewModel defaultChartsViewModel = new DefaultChartsViewModel();  
272     defaultChartsViewModel.RunMetricJavascript = GetCommonJavascriptProperties(metricOptions);
```

**Package: TestSecurityApplication.Controllers****Projects/Github/ATSPM/SPM/Controllers/ManageController.cs, line 129 (Mass  
Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: model**Enclosing Method:** AddPhoneNumber()**File:** Projects/Github/ATSPM/SPM/Controllers/ManageController.cs:129**Taint Flags:**

```
126 // POST: /Manage/AddPhoneNumber  
127 [HttpPost]  
128 [ValidateAntiForgeryToken]
```



**Mass Assignment: Insecure Binder Configuration****High****Package: TestSecurityApplication.Controllers****Projects/Github/ATSPM/SPM/Controllers/ManageController.cs, line 129 (Mass Assignment: Insecure Binder Configuration)****High**

```
129 public async Task<ActionResult> AddPhoneNumber(AddPhoneNumberViewModel model)
130 {
131     if (!ModelState.IsValid)
132     {
```

**Projects/Github/ATSPM/SPM/Controllers/ManageController.cs, line 241 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: model**Enclosing Method:** ChangePassword()**File:** Projects/Github/ATSPM/SPM/Controllers/ManageController.cs:241**Taint Flags:**

```
238 // POST: /Manage/ChangePassword
239 [HttpPost]
240 [ValidateAntiForgeryToken]
241 public async Task<ActionResult> ChangePassword(ChangePasswordViewModel model)
242 {
243     if (!ModelState.IsValid)
244     {
```

**Projects/Github/ATSPM/SPM/Controllers/ManageController.cs, line 272 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: model**Enclosing Method:** SetPassword()**File:** Projects/Github/ATSPM/SPM/Controllers/ManageController.cs:272**Taint Flags:**

```
269 // POST: /Manage/SetPassword
270 [HttpPost]
271 [ValidateAntiForgeryToken]
```



**Mass Assignment: Insecure Binder Configuration****High****Package: TestSecurityApplication.Controllers****Projects/Github/ATSPM/SPM/Controllers/ManageController.cs, line 272 (Mass Assignment: Insecure Binder Configuration)****High**

```
272 public async Task<ActionResult> SetPassword(SetPasswordViewModel model)
273 {
274     if (ModelState.IsValid)
275     {
```

**Projects/Github/ATSPM/SPM/Controllers/ManageController.cs, line 192 (Mass Assignment: Insecure Binder Configuration)****High****Issue Details****Kingdom:** API Abuse**Scan Engine:** SCA (Structural)**Audit Details**

Analysis

Bad Practice

**Sink Details****Sink:** Variable: model**Enclosing Method:** VerifyPhoneNumber()**File:** Projects/Github/ATSPM/SPM/Controllers/ManageController.cs:192**Taint Flags:**

```
189 // POST: /Manage/VerifyPhoneNumber
190 [HttpPost]
191 [ValidateAntiForgeryToken]
192 public async Task<ActionResult> VerifyPhoneNumber(VerifyPhoneNumberViewModel model)
193 {
194     if (!ModelState.IsValid)
195     {
```



## Open Redirect (4 issues)

### Abstract

Allowing unvalidated input to control the URL used in a redirect can aid phishing attacks.

### Explanation

Redirects allow web applications to direct users to different pages within the same application or to external sites. Applications utilize redirects to aid in site navigation and, in some cases, to track how users exit the site. Open redirect vulnerabilities occur when a web application redirects clients to any arbitrary URL that can be controlled by an attacker. Attackers can utilize open redirects to trick users into visiting a URL to a trusted site and redirecting them to a malicious site. By encoding the URL, an attacker can make it more difficult for end-users to notice the malicious destination of the redirect, even when it is passed as a URL parameter to the trusted site. Open redirects are often abused as part of phishing scams to harvest sensitive end-user data. **Example 1:** The following code instructs the user's browser to open a URL parsed from the `dest` request parameter when a user clicks the link.

```
String redirect = Request["dest"];
Response.Redirect(redirect);
```

If a victim receives an email instructing the user to follow a link to "`http://trusted.example.com/ecommerce/redirect.asp?dest=www.wilyhacker.com`", the user might click on the link believing they would be transferred to the trusted site. However, when the user clicks the link, the code above will redirect the browser to "`http://www.wilyhacker.com`". Many users have been educated to always inspect URLs they receive in emails to make sure the link specifies a trusted site they know. However, if the attacker encoded the destination url as follows: "`http://trusted.example.com/ecommerce/redirect.asp?dest=%77%69%6C%79%68%61%63%6B%65%72%2E%63%6F%6D`" then even a savvy end-user may be fooled into following the link.

### Recommendation

Unvalidated user input should not be allowed to control the destination URL in a redirect. Instead, use a level of indirection: create a list of legitimate URLs that users are allowed to specify and only allow users to select from the list. With this approach, input provided by users is never used directly to specify a URL for redirects. **Example 2:** The following code references an array populated with valid URLs. The link the user clicks passes in the array index that corresponds to the desired URL.

```
String redirect = Request["dest"];
Int32 strDest = System.Convert.ToInt32(redirect);
if((strDest >= 0) && (strDest <= strURLArray.Length -1 ))
{
    strFinalURL = strURLArray[strDest];
    pageContext.forward(strFinalURL);
}
```

In some situations this approach is impractical because the set of legitimate URLs is too large or too hard to keep track of. In such cases, use a similar approach to restrict the domains that users can be redirected to, which can at least prevent attackers from sending users to malicious external sites.

### Issue Summary



## Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
Open Redirect	4	0	0	4
<b>Total</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>

### Open Redirect

Critical

Package: SPM.Controllers

Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 697 (Open Redirect)

Critical

### Issue Details

**Kingdom:** Input Validation and Representation

**Scan Engine:** SCA (Data Flow)

### Audit Details

Analysis Not an Issue

### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:32:07 GMT-0600 (MDT)  
I have changed the code to verify that the return url is a local url.

### Source Details

**Source:** VerifyCode(0)

**From:** SPM.Controllers.AccountController.VerifyCode

**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:352

```
349 [HttpPost]
350 [AllowAnonymous]
351 [ValidateAntiForgeryToken]
352 public async Task<ActionResult> VerifyCode(VerifyCodeViewModel model)
353 {
354     if (!ModelState.IsValid)
355     {
```

### Sink Details

**Sink:** System.Web.Mvc.Controller.Redirect()

**Enclosing Method:** RedirectToLocal()

**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:697

**Taint Flags:** WEB, XSS



<b>Open Redirect</b>	<b>Critical</b>
<b>Package: SPM.Controllers</b>	
<b>Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 697 (Open Redirect)</b>	<b>Critical</b>

```

694  {
695  if (Url.IsLocalUrl(returnUrl))
696  {
697  return Redirect(returnUrl);
698  }
699  return RedirectToAction("Index", "Home");
700  }

```

<b>Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 697 (Open Redirect)</b>	<b>Critical</b>
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#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:32:07 GMT-0600 (MDT)  
I have changed the code to verify that the return url is a local url.

#### Source Details

**Source:** Login(1)  
**From:** SPM.Controllers.AccountController.Login  
**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:292

```

289  [HttpPost]
290  [AllowAnonymous]
291  [ValidateAntiForgeryToken]
292  public async Task<ActionResult> Login(LoginViewModel model, string
returnUrl)
293  {
294  if (returnUrl == null)
295  {

```

#### Sink Details

**Sink:** System.Web.Mvc.Controller.Redirect()  
**Enclosing Method:** RedirectToLocal()  
**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:697  
**Taint Flags:** WEB, XSS

```

694  {
695  if (Url.IsLocalUrl(returnUrl))
696  {
697  return Redirect(returnUrl);
698  }

```



<b>Open Redirect</b>	<b>Critical</b>
<b>Package: SPM.Controllers</b>	
<b>Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 697 (Open Redirect)</b>	<b>Critical</b>

```
699 return RedirectToAction("Index", "Home");
700 }
```

<b>Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 697 (Open Redirect)</b>	<b>Critical</b>
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#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:32:07 GMT-0600 (MDT)  
I have changed the code to verify that the return url is a local url.

#### Source Details

**Source:** ExternalLoginConfirmation(1)  
**From:** SPM.Controllers.AccountController.ExternalLoginConfirmation  
**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:598

```
595 [HttpPost]
596 [AllowAnonymous]
597 [ValidateAntiForgeryToken]
598 public async Task<ActionResult>
ExternalLoginConfirmation(ExternalLoginConfirmationViewModel model, string
returnUrl)
599 {
600 if (User.Identity.IsAuthenticated)
601 {
```

#### Sink Details

**Sink:** System.Web.Mvc.Controller.Redirect()  
**Enclosing Method:** RedirectToLocal()  
**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:697  
**Taint Flags:** WEB, XSS

```
694 {
695 if (Url.IsLocalUrl(returnUrl))
696 {
697 return Redirect(returnUrl);
698 }
699 return RedirectToAction("Index", "Home");
700 }
```





<b>Open Redirect</b>	<b>Critical</b>
<b>Package: SPM.Controllers</b>	
<b>Projects/Github/ATSPM/SPM/Controllers/AccountController.cs, line 697 (Open Redirect)</b>	<b>Critical</b>

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:32:07 GMT-0600 (MDT)  
I have changed the code to verify that the return url is a local url.

#### Source Details

**Source:** ExternalLoginCallback(0)  
**From:** SPM.Controllers.AccountController.ExternalLoginCallback  
**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:563

```

560  //
561  // GET: /Account/ExternalLoginCallback
562  [AllowAnonymous]
563  public async Task<ActionResult> ExternalLoginCallback(string returnUrl)
564  {
565  var loginInfo = await AuthenticationManager.GetExternalLoginInfoAsync();
566  if (loginInfo == null)

```

#### Sink Details

**Sink:** System.Web.Mvc.Controller.Redirect()  
**Enclosing Method:** RedirectToLocal()  
**File:** Projects/Github/ATSPM/SPM/Controllers/AccountController.cs:697  
**Taint Flags:** WEB, XSS

```

694  {
695  if (Url.IsLocalUrl(returnUrl))
696  {
697  return Redirect(returnUrl);
698  }
699  return RedirectToAction("Index", "Home");
700  }

```



## Password Management: Hardcoded Password (4 issues)

### Abstract

Hardcoded passwords may compromise system security in a way that cannot be easily remedied.

### Explanation

It is never a good idea to hardcode a password. Not only does hardcoding a password allow all of the project's developers to view the password, it also makes fixing the problem extremely difficult. Once the code is in production, the password cannot be changed without patching the software. If the account protected by the password is compromised, the owners of the system will be forced to choose between security and availability. **Example:** The following code uses a hardcoded password to connect to an application and retrieve address book entries:

```
...  
obj = new XMLHttpRequest();  
obj.open('GET', '/fetchusers.jsp?id='+form.id.value, 'true', 'scott', 'tiger');  
...
```

This code will run successfully, but anyone who accesses the containing web page will be able to view the password.

### Recommendation

Passwords should never be hardcoded and should generally be obfuscated and managed in an external source. Storing passwords in plaintext anywhere on the web site allows anyone with sufficient permissions to read and potentially misuse the password. For JavaScript calls that require passwords, it is better to prompt the user for the password at connection time.

### Issue Summary

### Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
Password Management: Hardcoded Password	4	0	0	4
<b>Total</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>



<b>Password Management: Hardcoded Password</b>	<b>Critical</b>
<b>Package: Projects.Github.ATSPM.SPM.Scripts</b>	
<b>Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.js, line 2119 (Password Management: Hardcoded Password)</b>	<b>Critical</b>

#### Issue Details

**Kingdom:** Security Features  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe:** Fri Jan 04 2019 09:05:00 GMT-0700 (MST)  
This is part of jquery code. It does not actually pass a password it designates a button type.

#### Sink Details

**Sink:** FieldAccess: password  
**Enclosing Method:** lambda()  
**File:** Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.js:2119  
**Taint Flags:**

```
2116 Expr.pseudos["nth"] = Expr.pseudos["eq"];
2117
2118 // Add button/input type pseudos
2119 for ( i in { radio: true, checkbox: true, file: true, password: true, image: true } ) {
2120   Expr.pseudos[ i ] = createInputPseudo( i );
2121 }
2122 for ( i in { submit: true, reset: true } ) {
```

<b>Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)</b>	<b>Critical</b>
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#### Issue Details

**Kingdom:** Security Features  
**Scan Engine:** SCA (Structural)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe:** Fri Jan 04 2019 09:05:43 GMT-0700 (MST)  
This is part of jquery code. It does not actually pass a password it designates a button type.

#### Sink Details

**Sink:** FieldAccess: password  
**Enclosing Method:** lambda()  
**File:** Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js:2  
**Taint Flags:**

```
1 /*! jQuery v3.3.1 -ajax,-ajax/jsonp,-ajax/load,-ajax/parseXML,-ajax/script,-ajax/var/
location,-ajax/var/nonce,-ajax/var/rquery,-ajax/xhr,-manipulation/_evalUrl,-event/ajax,-
effects,-effects/Tween,-effects/animatedSelector | (c) JS Foundation and other contributors |
jquery.org/license */
2 !function(e,t){ "use strict"; "object"==typeof module&&"object"==typeof module.exports?
module.exports=e.document?t(e,!0):function(e){if(!e.document)throw new Error("jQuery requires
```







<b>Password Management: Hardcoded Password</b>	<b>Critical</b>
<b>Package: Projects.Github.ATSPM.SPM.Scripts</b>	
<b>Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)</b>	<b>Critical</b>

```
id="x"></a><select id="x+x"-r\\' msallowcapture=""><option selected=""></option></select>".e.querySelectorAll("[msallowcapture^='']").length&&v.push("[*^$]="+I+"*(?:'|\\\"\\\"')",e.querySelectorAll("[selected]").length|v.push("\\["+I+"*(?:value|'+H+')",e.querySelectorAll("[id~='x+'-]").length|v.push("~=",e.querySelectorAll(":checked").length|v.push(":checked"),e.querySelectorAll("a#"+x+"*").length|v.push("#.+[~+]").length)),se(function(e){e.innerHTML="<a href=' disabled='disabled'></a><select disabled='disabled'><option></select>";var t=p.createElement("input");t.setAttribute("type","hidden"),e.appendChild(t).setAttribute("name",~?=""),2!==e.querySelectorAll(":enabled").length&&v.push(":enabled",":disabled"),h.appendChild(e).disabled,2!==e.querySelectorAll(":disabled").length&&v.push(":enabled",":disabled"),e.querySelectorAll("*,:(n.matchesSelector=G.test(m=h.matches||h.webkitMatchesSelector||h.mozMatchesSelector||h.oMatchesSelector||h.msMatchesSelector))&&se(function(e){n.disconnectedMatch=m.call(e,"*"),m.call(e,"[s!='']:x"),y.push("!=",M)}),v=v.length&&new RegExp(v.join("|")),y=y.length&&new RegExp(y.join("|")),t=G.test(h.compareDocumentPosition),b=t||G.test(h.contains)?function(e,t){var n=9===e.nodeType?e.documentElement:e,r=t&&t.parentNode;return e===r||!(r||l)!==r.nodeType||!(n.contains?n.contains(r):e.compareDocumentPosition&&l&e.compareDocumentPosition(r))}:function(e,t){if(t)while(t=t.parentNode)if(t===e)return!0;return!1},A=t?function(e,t){if(e===t)return f=!0,0;var r=l.e.compareDocumentPosition-!t.compareDocumentPosition;return r||(1&(r=(e.ownerDocument||e)===(t.ownerDocument||t)?e.compareDocumentPosition(t):1))||n.sortDetached&&t.compareDocumentPosition(e)===r?e===p||e.ownerDocument===w&&b(w,e)?-1:t===p||t.ownerDocument===w&&b(w,t)?1:c?P(c,e)-P(c,t):0:4&r?-1:1}:function(e,t){if(e===t)return f=!0,0;var n,r=0,i=e.parentNode,o=t.parentNode,a=[e],u=[t];if(!i||!o)return e===p?-1:t===p?1:i?-1:o?1:c?P(c,e)-P(c,t):0;if(i===o)return ce(e,t);n=e;while(n=n.parentNode)a.unshift(n);n=t;while(n=n.parentNode)u.unshift(n);while(a[r]!==u[r])return r?ce(a[r],u[r]):a[r]===w?-1:u[r]===w?1:0},p):p},oe.matches=function(e,t){return oe(e,null,null,t)},oe.matchesSelector=function(e,t){if((e.ownerDocument||e)!==p&&d(e),t=t.replace(_,"'$1'"),n.matchesSelector&&g&&!k[t+" "]&&(!y||!y.test(t))&&(!v||!v.test(t)))try{var r=m.call(e,t);if(r||n.disconnectedMatch||e.document&&l!==(e.nodeType?e.document.nodeType):return r)}catch(e){}return oe(t,p,null,[e]).length>0},oe.contains=function(e,t){return(e.ownerDocument||e)!==p&&d(e),b(e,t)},oe.attr=function(e,t){(e.ownerDocument||e)!==p&&d(e);var i=r.attrHandle[t.toLowerCase()],o=i&&D.call(r.attrHandle,t.toLowerCase())?i(e,t,!g):void 0;return void 0!==o?o:n.attributes||!g?e.getAttribute(t):(o=e.getAttributeNode(t))&&o.specified?o.value:null},oe.escape=function(e){return(e+"").replace(te,ne)},oe.error=function(e){throw new Error("Syntax error, unrecognized expression: "+e)},oe.uniqueSort=function(e){var t,r=[],i=0,o=0;if(f=!n.detectDuplicates,c=!n.sortStable&&e.slice(0),e.sort(A),f){while(t=e[o++])t===e[o]&&(i=r.push(o));while(i--)e.splice(r[i],1)}return c=null,e},i=oe.getText=function(e){var t,n="",r=0,o=e.nodeType;if(o){if(1===o||9===o||11===o){if("string"===typeof e.textContent)return e.textContent;for(e=e.firstChild;e=e.nextSibling)n+=i(e)}else if(3===o||4===o)return e.nodeValue}else while(t=e[r++])n+=i(t);return n},(r=oe.selectors={cacheLength:50,createPseudo:ue,match:X,attrHandle:{},find:{},relative:{>:{dir:"parentNode",first:!0},"+":{dir:"parentNode"},"+":{dir:"previousSibling",first:!0},"~":{dir:"previousSibling"}},preFilter:{ATTR:function(e){return e[1]=e[1].replace(Z,ee),e[3]=(e[3]||e[4]||e[5]||e[6]).replace(Z,ee),"~"===e[2]&&(e[3]=" "+e[3]+" "),e.slice(0,4)},CHILD:function(e){return e[1]=e[1].toLowerCase(),"nth"===e[1].slice(0,3)?(e[3]?e[2]=e[4]||e[5]+(e[6]||1):2*(e[3]||"odd"===e[3])):e[5]+(e[7]+e[8]||"odd"===e[3]):e[3]&&oe.error(e[0]),e},PSEUDO:function(e){var t,n=!e[6]&&e[2];return X.CHILD.test(e[0])?null:(e[3]?e[2]=e[4]||e[5]||"":n&&U.test(n)&&(t=a(n,!0))&&(t=n.indexOf(")",n.length-t)-n.length)&&(e[0]=e[0].slice(0,t),e[2]=n.slice(0,t)),e.slice(0,3))}},filter:{TAG:function(e){var t=e.replace(Z,ee).toLowerCase();return""===e?function(){return!0}:function(e){return e.nodeName&&e.nodeName.toLowerCase()===t}},CLASS:function(e){var t=E[e+" "];return t||t=new RegExp("(^|"+I+")"+"e+"+"("+I+"|$)"))&&E(e,function(e){return t.test("string"===typeof
```





**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
e.className&&e.className||"undefined"!typeof
e.getAttribute&&e.getAttribute("class")||""))},ATTR:function(e,t,n){return function(r){var
i=oe.attr(r,e);return null==i?"!="===t:!t||i+="",!=""===t?i===n:"!="===t?i!==n:"^"===t?
n&&0===i.indexOf(n):"*"===t?n&&i.indexOf(n)>-1:"$"===t?n&&i.slice(-n.length)===n:"~"===t?("
"+i.replace(W," ")+"").indexOf(n)>-1:"|"===t&&(i===n||
i.slice(0,n.length+1)===n+"-"))}},CHILD:function(e,t,n,r,i){var o="nth"!
==e.slice(0,3),a="last"!==e.slice(-4),u="of-type"===t;return 1===r&&0===i?function(e){return!!
e.parentNode}:function(t,n,s){var l,c,f,d,p,h,g=o!
==a?"nextSibling":"previousSibling",v=t.parentNode,y=u&&t.nodeName.toLowerCase(),m=!s&&!u,b=!
1;if(v){if(o){while(g){d=t;while(d=d[g]){if(u&&d.nodeName.toLowerCase()===y:
1===d.nodeType)return!1;h=g="only"===e&&!h&&"nextSibling"}return!0}if(h=[a?
v.firstChild:v.lastChild],a&&m){b=(p=(l=(c=(f=(d=v)[x]||{d[x]={}})[d.uniqueID]||
(f[d.uniqueID]={}))[e]||[])[0]===C&&l[1])&&l[2],d=p&&v.childNodes[p];while(d=++p&&d&&d[g]||
(b=p=0)||h.pop())if(1===d.nodeType&&+b&&d===t){c[e]=[C,p,b];break}}else
if(m&&(b=p=(l=(c=(f=(d=t)[x]||{d[x]={}})[d.uniqueID]||{f[d.uniqueID]={}})[e]||[])[
0]===C&&l[1]),!1===b)while(d=++p&&d&&d[g]||(b=p=0)||h.pop())if((u?
d.nodeName.toLowerCase()===y:1===d.nodeType)&&+b&&(m&&(c=(f=d[x]||{d[x]={}})[d.uniqueID]||
(f[d.uniqueID]={}))[e]=[C,b]),d===t))break;return(b==i)===r||b%r==0&&b/
r>=0}}},PSEUDO:function(e,t){var n,i=r.pseudos[e]||r.setFilters[e.toLowerCase()]||
oe.error("unsupported pseudo: "+e);return i[x]?i(t):i.length>1?
(n=[e,e,"",t],r.setFilters.hasOwnProperty(e.toLowerCase())?ue(function(e,n){var
r,o=i(e,t),a=o.length;while(a--){e[r=P(e,o[a])]=!(n[r]=o[a])}:function(e){return i(e,
0,n)}:i}),pseudos:{not:ue(function(e){var t=[],n=[],r=u(e.replace($,"$1"));return r[x]?
ue(function(e,t,n,i){var o,a=r(e,null,i,[]),u=e.length;while(u--){o=a[u]&&(e[u]=!
(t[u]=o))}:function(e,i,o){return t[0]=e,r(t,null,o,n),t[0]=null,!
n.pop()})},has:ue(function(e){return function(t){return
oe(e,t).length>0}),contains:ue(function(e){return e=e.replace(Z,ee),function(t)
{return(t.textContent||t.innerText||i(t)).indexOf(e)>-1}}),lang:ue(function(e){return
V.test(e||"")}||oe.error("unsupported lang: "+e),e=e.replace(Z,ee).toLowerCase(),function(t)
{var n;do{if(n=g?t.lang:t.getAttribute("xml:lang")||
t.getAttribute("lang"))return(n=n.toLowerCase())===e||0===n.indexOf(e+"-")}
while((t=t.parentNode)&&1===t.nodeType);return!1})),target:function(t){var
n=e.location&&e.location.hash;return n&&n.slice(1)===t.id},root:function(e){return
e===h},focus:function(e){return e===p.activeElement&&(!p.hasFocus||p.hasFocus())&&!!(e.type||
e.href||~e.tabIndex)},enabled:pe(!1),disabled:pe(!0),checked:function(e){var
t=e.nodeName.toLowerCase();return"input"===t&&!e.checked||"option"===t&&!!
e.selected},selected:function(e){return e.parentNode&&e.parentNode.selectedIndex,!
0===e.selected},empty:function(e){for(e=e.firstChild;e=e.nextSibling)if(e.nodeType<6)return!
1;return!0},parent:function(e){return!r.pseudos.empty(e)},header:function(e){return
Y.test(e.nodeName)},input:function(e){return Q.test(e.nodeName)},button:function(e){var
t=e.nodeName.toLowerCase();return"input"===t&&"button"===e.type||"button"===t},text:function(e)
{var
t;return"input"===e.nodeName.toLowerCase()&&"text"===e.type&&(null==(t=e.getAttribute("type"))||
{return[0]}),last:he(function(e,t){return[t-1]}),eq:he(function(e,t,n){return[n<0?
n+t:n]}),even:he(function(e,t){for(var n=0;n<t;n+=2)e.push(n);return e}),odd:he(function(e,t)
{for(var n=1;n<t;n+=2)e.push(n);return e}),lt:he(function(e,t,n){for(var r=n<0?n+t:n;--
r>=0;)e.push(r);return e}),gt:he(function(e,t,n){for(var r=n<0?n+t:n;++r<t;)e.push(r);return
e})).pseudos.nth=r.pseudos.eq;for(t in{radio:!0,checkbox:!0,file:!0,password:!0,image:!
0})r.pseudos[t]=fe(t);for(t in{submit:!0,reset:!0})r.pseudos[t]=de(t);function ve(){
ve.prototype=r.filters=r.pseudos,r.setFilters=new ve,a=oe.tokenize=function(e,t){var
n,i,o,a,u,s,l,c=N[e+" "];if(c)return t?c.slice(0);u=e,s=[],l=r.preFilter;while(u){n&&
(i=F.exec(u))||!(i&&(u=u.slice(i[0].length)||u),s.push(o=[])),n=!1,
(i=z.exec(u))&&(n=i.shift(),o.push({value:n,type:i[0].replace($,"
")})),u=u.slice(n.length)};for(a in r.filter)!(i=X[a].exec(u))||l[a]&&!(i=l[a](i))||
(n=i.shift(),o.push({value:n,type:a,matches:i}),u=u.slice(n.length));if(!n)break}return t?
u.length:u?oe.error(e):N(e,s).slice(0)};function ye(e){for(var t=0,n=e.length,r="";t<n;t+
+)r+=e[t].value;return r}function me(e,t,n){var r=t.dir,i=t.next,o=i||
r,a=n&&"parentNode"===o,u=T++;return t.first?function(t,n,i){while(t=t[r])if(1===t.nodeType||
a)return e(t,n,i);return!1}:function(t,n,s){var l,c,f,d=[C,u];if(s)
```

**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
{while(t=t[r])if((1===t.nodeType||a)&&e(t,n,s))return!0}else while(t=t[r])if(1===t.nodeType||
a)if(f=t[x]||(t[x]={}),c=f[t.uniqueID]||
(f[t.uniqueID]={}),i&&i===t.nodeName.toLowerCase())t=t[r]||
t;else{if((l=c[o])&&l[0]===C&&l[1]===u)return d[2]=l[2];if(c[o]=d,d[2]=e(t,n,s))return!0}
return!1}}function be(e){return e.length>1?function(t,n,r){var i=e.length;while(i--){if(!e[i]
(t,n,r))return!1;return!0}:e[0]}function xe(e,t,n){for(var r=0,i=t.length;r<i;r+
+)oe(e,t[r],n);return n}function we(e,t,n,r,i){for(var o,a=[],u=0,s=e.length,l=null!=t;u<s;u++)
(o=e[u])&&(n&&!n(o,r,i)||a.push(o),l&&t.push(u));return a}function Ce(e,t,n,r,i,o){return
r&&!r[x]&&(r=Ce(r)),i&&!i[x]&&(i=Ce(i,o)),ue(function(o,a,u,s){var
l,c,f,d=[],p=[],h=a.length,g=o||xe(t||"",u.nodeType?[u]:u,[],),v=!e||!o&&t?g:we(g,d,e,u,s),y=n?
i||o?e:h||r?[]:a:v;if(n&&n(v,y,u,s),r){l=we(y,p),r(l,[],u,s),c=l.length;while(c--
)(f=l[c])&&(y[p[c]]!=l[v[p[c]]]=f))if(o){if(i||e){if(i){l=[],c=y.length;while(c--
)(f=y[c])&&l.push(v[c]=f);i(null,y=[],l,s)}c=y.length;while(c--)(f=y[c])&&(l=i?
P(o,f):d[c])>-1&&(o[l]=l[a[l]=f]))}else y=we(y===a?y.splice(h,y.length):y),i?
i(null,a,y,s):q.apply(a,y)}}}function Te(e){for(var
t,n,i,o=e.length,a=r.relative[e[0].type],u=a||r.relative[" "],s=a?1:0,c=me(function(e){return
e===t},u,!0),f=me(function(e){return P(t,e)>-1},u,!0),d=[function(e,n,r){var i=!a&&(r||n!==(l||
(t=n).nodeType?c(e,n,r):f(e,n,r));return t=null,i];s<o;s+
+)if(n=r.relative[e[s].type])d=[me(be(d),n)];else if((n=r.filter[e[s].type].apply(null,e[s].matc
[x])){for(i=++s;i<o;i++)if(r.relative[e[i].type])break;return
Ce(s>l&&be(d),s>l&&ye(e.slice(0,s-1).concat({value:"
"===e[s-2].type?"*":"*"})).replace($,"$1"),n,s<i&&Te(e.slice(s,i)),i<o&&Te(e=e.slice(i)),i<o&&ye
d.push(n)}return be(d)}function Ee(e,t){var n=t.length>0,i=e.length>0,o=function(o,a,u,s,c)
{var f,h,v,y=0,m="0",b=o&&[],x=[],w=l,T=o||i&&r.find.TAG("*",c),E=C+=null!=w?1:Math.random()||.
1,N=T.length;for(c&&(l=a===p||a||c);m!=N&&null!=(f=T[m]);m++){if(i&&f){h=0,a||
f.ownerDocument===p||((d(f),u!=g);while(v=e[h++])if(v(f,a||p,u)){s.push(f);break}c&&(C=E)}
n&&(f!=v&&f)&&y--&&o&&b.push(f)}if(y+m,n&&m!=y){h=0;while(v=t[h++])v(b,x,a,u);if(o)
{if(y>0)while(m--){b[m]||x[m]||x[m]=L.call(s)};x=we(x)}q.apply(s,x),c&&
o&&x.length>0&&y+t.length>1&&oe.uniqueSort(s)}return c&&(C=E,l=w),b};return n?ue(o):o}return
u=oe.compile=function(e,t){var n,r=[],i=[],o=k[e+" "];if(!o){t||t=a(e),n=t.length;while(n--
)(o=Te(t[n]))[x]?r.push(o):i.push(o);(o=k(e,Ee(i,r))).selector=e}return
o},s=oe.select=function(e,t,n,i){var o,s,l,c,f,d="function"===typeof e&&e,p=!i&&a(e=d.selector||
e);if(n=n||[],l===p.length)
{if((s=p[0]=p[0].slice(0)).length>2&&"ID"===l=s[0].type&&9===t.nodeType&&g&&r.relative[s[1].ty
{if(!t=(r.find.ID(l.matches[0].replace(Z,ee),t)||[])[0]))return
n;d&&(t=t.parentNode),e=e.slice(s.shift().value.length)}o=X.needsContext.test(e)?
0:s.length;while(o--
{if(l=s[o],r.relative[c=l.type])break;if((f=r.find[c])&&(i=f(l.matches[0].replace(Z,ee),J.test(s
t)))||if(s.splice(0,1),!(e=i.length&&ye(s)))return q.apply(n,i),n;break}}return d||u(e,p))
(i,t,!g,n,!t||J.test(e)&&ge(t.parentNode)||
t),n},n.sortStable=x.split("").sort(A).join("")===x,n.detectDuplicates=!!
f,d(),n.sortDetached=se(function(e){return
l&e.compareDocumentPosition(p.createElement("fieldset"))},se(function(e){return
e.innerHTML="<a href='#'></a>","#"===e.firstChild.getAttribute("href")})||le("type|href|height|
width",function(e,t,n){if(!n)return e.getAttribute(t,"type"===t.toLowerCase()?
1:2)}),n.attributes&&se(function(e){return e.innerHTML="<input/
>","e.firstChild.setAttribute("value",""),"#"===e.firstChild.getAttribute("value")})||
le("value",function(e,t,n){if(!n&&"input"===e.nodeName.toLowerCase())return
e.defaultValue}),se(function(e){return null===e.getAttribute("disabled")})||le(H,function(e,t,n)
{var r;if(!n)return!0===e[t]?t.toLowerCase():r=e.getAttributeNode(t)&&r.specified?
r.value:null}),oe)
(e);w.find=E,w.expr=E.selectors,w.expr[":"]=w.expr.pseudos,w.uniqueSort=w.unique=E.uniqueSort,w.
N=function(e,t,n){var r=[],i=void 0===n;while((e=e[t])&&9===e.nodeType)if(1===e.nodeType)
{if(i&&w(e).is(n))break;r.push(e)}return r},k=function(e,t){for(var
n=[];e=e.nextSibling)1===e.nodeType&&e!==t&&n.push(e);return
n},A=w.expr.match.needsContext;function D(e,t){return
e.nodeName&&e.nodeName.toLowerCase()===t.toLowerCase()}var S=/^<([a-z][^\>:\x20\t\r\n\f]*)
[\x20\t\r\n\f]*\/?>(?:<\/\1>|)$/i;function L(e,t,n){return g(t)?w.grep(e,function(e,r){return!!
t.call(e,r,e)!==n}):t.nodeType?w.grep(e,function(e){return e===t}):"string"!==typeof t?
```



**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
w.grep(e,function(e){return s.call(t,e)>-1!==n}):w.filter(t,e,n)}w.filter=function(e,t,n){var
r=t[0];return n&&(e=":not("+e+")"),1===t.length&&1===r.nodeType?w.find.matchesSelector(r,e)?
[r]:[]:w.find.matches(e,w.grep(t,function(e){return
1===e.nodeType})),w.fn.extend({find:function(e){var t,n,r=this.length,i=this;if("string"!
=typeof e)return this.pushStack(w(e).filter(function(){for(t=0;t<r;t+
+))if(w.contains(i[t],this))return!0}));for(n=this.pushStack([]),t=0;t<r;t+
+)w.find(e,i[t],n);return r>1?w.uniqueSort(n):n},filter:function(e){return
this.pushStack(L(this,e||[],!1)),not:function(e){return this.pushStack(L(this,e||[],!
0))},is:function(e){return!!L(this,"string"===typeof e&&A.test(e)?w(e):e||[],!1).length}});var
j,q=/^(?:(\s*(<[\w\W]+>)[^>]*|#[\w-]+)|$)/;(w.fn.init=function(e,t,n){var i,o;if(!e)return
this;if(n=n||j,"string"===typeof e){if(!i="<====e[0]&&">===e[e.length-1]&&e.length>=3?
[null,e,null]:q.exec(e))||i[1]&&t)return!t||t.jquery?(t||
n).find(e):this.constructor(t).find(e);if(i[1]){if(t=t instanceof w?
t[0]:t,w.merge(this,w.parseHTML(i[1],t&&t.nodeType?t.ownerDocument||t:r,!
0)),S.test(i[1])&&w.isPlainObject(t))for(i in t)g(this[i]?this[i]
(t[i]):this.attr(i,t[i]));return this}
return(o=r.getElementById(i[2]))&&(this[0]=o,this.length=1),this)return e.nodeType?
(this[0]=e,this.length=1,this):g(e)?void 0!==n.ready?
n.ready(e):e(w):w.makeArray(e,this)}.prototype=w.fn,j=w(r);var O=/^(?:parents|prev(?:Until|
All))/,P={children:!0,contents:!0,next:!0,prev:!0};w.fn.extend({has:function(e){var
t=w(e,this),n=t.length;return this.filter(function(){for(var e=0;e<n;e+
+)if(w.contains(this,t[e]))return!0})),closest:function(e,t){var
n,r=0,i=this.length,o=[],a="string"!==typeof e&&w(e);if(!A.test(e))for(;r<i;r+
+)for(n=this[r];n&&n!==t;n=n.parentNode)if(n.nodeType<11&&(a?
a.index(n)>-1:1===n.nodeType&&w.find.matchesSelector(n,e)))o.push(n);break}return
this.pushStack(o.length>1?w.uniqueSort(o):o)},index:function(e){return e?"string"===typeof e?
s.call(w(e),this[0]):s.call(this,e.jquery?e[0]:e):this[0]&&this[0].parentNode?
this.first().prevAll().length:-1},add:function(e,t){return
this.pushStack(w.uniqueSort(w.merge(this.get(),w(e,t))))},addBack:function(e){return
this.add(null===e?this.prevObject:this.prevObject.filter(e))});function H(e,t)
{while((e=e[t])&&1!==e.nodeType);return e}w.each({parent:function(e){var t=e.parentNode;return
t&&11!==t.nodeType?t:null},parents:function(e){return
N(e,"parentNode")},parentsUntil:function(e,t,n){return N(e,"parentNode",n)},next:function(e)
{return H(e,"nextSibling")},prev:function(e){return H(e,"previousSibling")},nextAll:function(e)
{return N(e,"nextSibling")},prevAll:function(e){return
N(e,"previousSibling")},nextUntil:function(e,t,n){return
N(e,"nextSibling",n)},prevUntil:function(e,t,n){return
N(e,"previousSibling",n)},siblings:function(e){return k((e.parentNode||
{}).firstChild,e)},children:function(e){return k(e.firstChild)},contents:function(e){return
D(e,"iframe")?e.contentDocument:(D(e,"template")&&(e=e.content||
e),w.merge([],e.childNodes))},function(e,t){w.fn[e]=function(n,r){var
i=w.map(this,t,n);return"Until"!==e.slice(-5)&&(r=n),r&&"string"===typeof
r&&(i=w.filter(r,i)),this.length>1&&(P[e]||
w.uniqueSort(i),O.test(e)&&i.reverse()),this.pushStack(i)});var I=/^[^x20\t\r\n\f]+/
g;function R(e){var t={};return w.each(e.match(I)||[],function(e,n){t[n]=!0}),t}
w.Callbacks=function(e){e="string"===typeof e?R(e):w.extend({},e);var
t,n,r,i,o=[],a=[],u=-1,s=function(){for(i=i||e.once,r=t=!0;a.length;u=-1){n=a.shift();while(+
+u<o.length)!1===o[u].apply(n[0],n[1])&&e.stopOnFalse&&(u=o.length,n=!1)}e.memory||n=!1,t=
1,i&&(o=n?[]:"")},l={add:function(){return o&&(n&&!t&&(u=o.length-1,a.push(n)),function t(n)
{w.each(n,function(n,r){g(r)?e.unique&&l.has(r)||o.push(r):r&&r.length&&"string"!
==b(r)&&t(r)})}(arguments),n&&!t&&s()),this},remove:function(){return
w.each(arguments,function(e,t){var n;while((n=w.inArray(t,o,n))>-1)o.splice(n,
1),n<=u&&u--},this),has:function(e){return e?w.inArray(e,o)>-1:o.length>0},empty:function()
{return o&&(o=[]),this},disable:function(){return i=a=[],o=n="",this},disabled:function()
{return!o},lock:function(){return i=a=[],n||t||o=n="",this},locked:function(){return!!
i},fireWith:function(e,n){return i||(n=[e,(n=n||[]).slice?n.slice():n],a.push(n),t||
s()),this},fire:function(){return l.fireWith(this,arguments),this},fired:function(){return!!
r}};return l};function B(e){return e}function M(e){throw e}function W(e,t,n,r){var
i;try{e&&g(i=e.promise)?i.call(e).done(t).fail(n):e&&g(i=e.then)?i.call(e,t,n):t.apply(void 0,
```

**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
[e].slice(r))}catch(e){n.apply(void 0,[e])}w.extend({Deferred:function(t){var n=[["notify","progress",w.Callbacks("memory"),w.Callbacks("memory"),2],["resolve","done",w.Callbacks("once memory"),w.Callbacks("once memory"),0,"resolved"],["reject","fail",w.Callbacks("once memory"),w.Callbacks("once memory"),1,"rejected"]],r="pending",i={state:function(){return r},always:function(){return o.done(arguments).fail(arguments),this},"catch":function(e){return i.then(null,e)},pipe:function(){var e=arguments;return w.Deferred(function(t){w.each(n,function(n,r){var i=g(e[r[4]])&&e[r[4]];o[r[1]](function(){var e=i&&i.apply(this,arguments);e&&g(e.promise)?e.promise().progress(t.notify).done(t.resolve).fail(t.reject):t[r[0]+"With"](this,i?[e]:arguments)}),e=null)}.promise()),then:function(t,r,i){var o=0;function a(t,n,r,i){return function(){var u=this,s=arguments,l=function(){var e,l;if(!(t<o))if((e=r.apply(u,s))==n.promise())throw new TypeError("Thenable self-resolution");l=e&&("object"===typeof e||"function"===typeof e)&&e.then,g(l)?l.call(e,a(o,n,B,i),a(o,n,M,i)):(o++,l.call(e,a(o,n,B,i),a(o,n,M,i),a(o,n,B,n.notifyWith))):(r!==(B&&(u=void 0,s=[e]),(i||n.resolveWith)(u,s))),c=i?l:function(){try{l()}catch(e){w.Deferred.exceptionHook&&w.Deferred.exceptionHook(e,c.stackTrace),t+1>o&&(r!=M&&(u=void 0,s=[e]),n.rejectWith(u,s))}};t?c():w.Deferred.getStackHook&&(c.stackTrace=w.Deferred.getStackHook()),e.setTimeout(c))}}return w.Deferred(function(e){n[0][3].add(a(0,e,g(i)?i:B,e.notifyWith)),n[1][3].add(a(0,e,g(t)?t:B)),n[2][3].add(a(0,e,g(r)?r:M))}.promise()),promise:function(e){return null!=e?w.extend(e,i):i},o={};return w.each(n,function(e,t){var a=t[2],u=t[5];i[t[1]]=a.add,u&&a.add(function(){r=u},n[3-e][2].disable,n[3-e][3].disable,n[0][2].lock,n[0][3].lock),a.add(t[3].fire),o[t[0]]=function(){return o[t[0]+"With"](this===o?void 0:this,arguments),this},o[t[0]+"With"]=a.fireWith}),i.promise(o),t&&t.call(o,o,o),when:function(){var t=arguments.length,n=t,r=Array(n),i=o.call(arguments),a=w.Deferred(),u=function(e){return function(n){r[e]=this,i[e]=arguments.length>1?o.call(arguments):n,--t||a.resolveWith(r,i)}};if(t<=1&&(W(e,a.done(u(n)).resolve,a.reject,!t),"pending"===a.state()||g(i[n]&&i[n].then)))return a.then();while(n--){W(i[n],u(n),a.reject);return a.promise()}};var $=/^(Eval|Internal|Range|Reference|Syntax|Type|URI)Error$/;w.Deferred.exceptionHook=function(t,n){e.console&&e.console.warn&&t&&$.test(t.name)&&e.console.warn("jQuery.Deferred exception: "+t.message,t.stack,n)},w.readyException=function(t){e.setTimeout(function(){throw t});var F=w.Deferred();w.fn.ready=function(e){return F.then(e)["catch"](function(e){w.readyException(e)}),this},w.extend({isReady:!1,readyWait:1,ready:function(e){(!0===e?--w.readyWait:w.isReady)||w.isReady=1,!0!==e&&--w.readyWait>0||F.resolveWith(r,[w])}),w.ready.then=F.then;function z(){r.removeEventListener("DOMContentLoaded",z),e.removeEventListener("load",z),w.ready()}==r.readyState&&r.documentElement.doScroll?e.setTimeout(w.ready):(r.addEventListener("DOMContentLoaded",z),e.addEventListener("load",z));var _=function(e,t,n,r,i,o,a){var u=0,s=e.length,l=null==n;if("object"===b(n)){i=!0;for(u in n)_(e,t,u,n[u],!0,o,a)}else if(void 0!==r&&(i=!0,g(r)||a=!0),l&&a?(t.call(e,r),t=null):(l=t,t=function(e,t,n){return l.call(w(e),n)}),t))for(u<s;u++)t(e[u],n,a?r:r.call(e[u],u,t(e[u],n)));return i?e:l?t.call(e):s?t(e[0],n):o,U=/^-ms-/ ,V=/-([a-z])/g;function X(e,t){return t.toUpperCase()}function Q(e){return e.replace(U,"ms-").replace(V,X)}var Y=function(e){return l===e.nodeType||9===e.nodeType||!+e.nodeType};function G(){this.expando=w.expando+G.uid++;G.uid=1,G.prototype={cache:function(e){var t=e[this.expando];return t||(t={},Y(e)&&(e.nodeType?e[this.expando]=t:Object.defineProperty(e,this.expando,{value:t,configurable:!0}))),t},set:function(e,t,n){var r,i=this.cache(e);if("string"===typeof t)i[Q(t)]=n;else for(r in t)i[Q(r)]=t[r];return i},get:function(e,t){return void 0===t?this.cache(e):e[this.expando]&&e[this.expando][Q(t)],access:function(e,t,n){return void 0===t||t&&"string"===typeof t&&void 0===n?this.get(e,t):(this.set(e,t,n),void 0!==n?n:t)},remove:function(e,t){var n,r=e[this.expando];if(void 0!==r){if(void 0!==t){n=(t=Array.isArray(t)?t.map(Q):(t=Q(t))in r?t:t.match(I)||[]).length;while(n--){delete r[t[n]]}(void 0===t||w.isEmptyObject(r))&&(e.nodeType?e[this.expando]=void 0:delete e[this.expando])},hasData:function(e){var t=e[this.expando];return void 0!==t&&!w.isEmptyObject(t)}};var K=new G,J=new G,Z=/^(?:(\\[\\w\\W]*\\)|\\[[\\w\\W]*\\])$/ ,ee=/[A-Z]/g;function te(e){return"true"===e||"false"!==e&&("null"===e?null:e===+e+""?+e:Z.test(e)?
```

**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
JSON.parse(e):e)}function ne(e,t,n){var r;if(void 0===n&&1===e.nodeType)if(r="data-"+t.replace(ee,"-$&").toLowerCase(),"string"===typeof(n=e.getAttribute(r))){try{n=te(n)}catch(e){}J.set(e,t,n)}else n=void 0;return n}w.extend({hasData:function(e){return J.hasData(e)||K.hasData(e)},data:function(e,t,n){return J.access(e,t,n)},removeData:function(e,t){J.remove(e,t)},_data:function(e,t,n){return K.access(e,t,n)},_removeData:function(e,t){K.remove(e,t)}},w.fn.extend({data:function(e,t){var n,r,i,o=this[0],a=o&&o.attributes;if(void 0===e){if(this.length&&(i=J.get(o),1===o.nodeType&&!K.get(o,"hasDataAttrs"))){n=a.length;while(n--){a[n]&&0===r=a[n].name.indexOf("data-")&&(r=Q(r.slice(5)),ne(o,r,i[r]));K.get(o)}return i}return"object"===typeof e?this.each(function(){J.set(this,e)}):_(this,function(t){var n;if(o&&void 0===t){if(void 0!==(n=J.get(o,e))return n;if(void 0!==(n=ne(o,e))return n}else this.each(function(){J.set(this,e,t)}),null,t,arguments.length>1,null,!0)},removeData:function(e){return this.each(function(){J.remove(this,e)}))},w.extend({queue:function(e,t,n){var r;if(e)return t=(t||"fx")+"queue",r=K.get(e,t),n&&(!r||Array.isArray(n)?r=K.access(e,t,w.makeArray(n)):r.push(n)),r||[]},dequeue:function(e,t){t=t||"fx";var n=w.queue(e,t),r=n.length,i=n.shift(),o=w._queueHooks(e,t),a=function(){n.dequeue(e,t)};"inprogress"===i&&(i=n.shift(),r--),i&&("fx"===t&&n.unshift("inprogress"),delete o.stop,i.call(e,a,o)),!r&&o.empty.fire(),_queueHooks:function(e,t){var n=t+"queueHooks";return K.get(e,n)||K.access(e,n,{empty:w.Callbacks("once memory").add(function(){K.remove(e,[t+"queue",n])})})},w.fn.extend({queue:function(e,t){var n=2;return"string"!==typeof e&&(t=e,e="fx",n--),arguments.length<n?w.queue(this[0],e):void 0===t?this:this.each(function(){var n=w.queue(this,e,t);w._queueHooks(this,e),"fx"===e&&"inprogress"!==n[0]&&w.dequeue(this,e)}),dequeue:function(e){return this.each(function(){w.dequeue(this,e)}),clearQueue:function(e){return this.queue(e||"fx",[]),promise:function(e,t){var n,r,l,i=w.Deferred(),o=this,a=this.length,u=function(){--r||i.resolveWith(o,[o])};"string"!==typeof e&&(t=e,e=void 0),e=e||"fx";while(a--)(n=K.get(o[a],e+"queueHooks"))&&n.empty&&(r++,n.empty.add(u));return u(),i.promise(t)}},var re=/[+-]?(\d*\.\d+)?([Ee][+-]?\d+)?/;source,ie=new RegExp("^([+-])=|")("++re")([a-z%]*)*$","i"),oe=["Top","Right","Bottom","Left"],ae=function(e,t){return"none"===(e=t||e).style.display||""===e.style.display&&w.contains(e.ownerDocument,e)&&"none"===w.css(e,"display")?var i,o,a={};for(o in t)a[o]=e.style[o],e.style[o]=t[o];i=n.apply(e,r||[]);for(o in t)e.style[o]=a[o];return i};function se(e,t,n,r){var i,o,a=20,u=r?function(){return r.cur():function(){return w.css(e,t,"")},s=u(),l=n&&n[3]||w.cssNumber[t]?:"px",c=(w.cssNumber[t]||"px"!==l&&s)&&ie.exec(w.css(e,t));if(c&&c[3]!==l){s/=2,l=1||c[3],c=s||l;while(a--){w.style(e,t,c+(1-o)*(1-(o=u())/s||.5))<=0&&(a=0),c/=o;c*=2,w.style(e,t,c+1),n=n||[];return n&&(c=c+1||s||0,i=n[1]?c+(n[1]+1)*n[2]:+n[2],r&&(r.unit=l,r.start=c,r.end=i)),i}var le={};function ce(e){var t,n=e.ownerDocument,r=e.nodeName,i=le[r];return i||(t=n.body.appendChild(n.createElement(r)),i=w.css(t,"display"),t.parentNode.removeChild(t),"none"===i&&(i=K.get(r,"display"))||null,i[o]||(r.style.display=i),""===r.style.display&&ae(r)&&(i[o]=ce(r))):"none"===n&&i[o]="none",K.set(r,"display",n))};for(o=0;o<a;o++)null!=i[o]&&(e[o].style.display=i[o]);return e}w.fn.extend({show:function(){return fe(this,!0)},hide:function(){return fe(this)},toggle:function(e){return"boolean"===typeof e?e?this.show():this.hide():this.each(function(){ae(this)?w(this).show():w(this).hide()})});var de=/^(?:checkbox|radio)$/i,pe=/^([a-z][^\/\0\t\r\n\f]*)/i,he=/^$|^module$/i/(?:java|ecma)script/i,ge={option:[1,"<select multiple='multiple'>","</select>"],thead:[1,"<table>","</table>"],col:[2,"<table><colgroup>","</colgroup></table>"],tr:[2,"<table><tbody>","</tbody></table>"],td:[3,"<table><tbody><tr>","</tr></tbody></table>"],_default:[0,"",""]};ge.optgroup=ge.option,ge.tbody=ge.tfoot=ge.colgroup=ge.caption=ge.thead,ge.th=ge.td;fe(e,t){var n;return n="undefined"!==typeof e.getElementsByTagName?e.getElementsByTagName(t||"*"):e.querySelectorAll(t||"*"):[];void 0===t||t&&D(e,t)?w.merge([e],n):n=n?r=e.length;n<r;n++)K.set(e[n],"globalEval",!t||K.get(t[n],"globalEval"))}var me=/<|&#?\w+;/;function be(e,t,n,r,i){for(var
```





**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
0,configurable:!0,writable:!0,value:t)}}}}},fix:function(e){return e[w.expando]?e:new
w.Event(e)},special:{load:{noBubble:!0},focus:{trigger:function(){if(this!
==ke()&&this.focus)return this.focus(),!1},delegateType:"focusin"},blur:{trigger:function()
{if(this===ke()&&this.blur)return this.blur(),!1},delegateType:"focusout"},click:
{trigger:function(){if("checkbox"===this.type&&this.click&&D(this,"input"))return
this.click(),!1},_default:function(e){return D(e.target,"a")}},beforeunload:
{postDispatch:function(e){void 0!
==e.result&&e.originalEvent&&(e.originalEvent.returnValue=e.result)}}},w.removeEvent=function(e
{e.removeEventListener&&e.removeEventListener(t,n)},w.Event=function(e,t){if(!(this instanceof
w.Event))return new w.Event(e,t);e&&e.type?
(this.originalEvent=e,this.type=e.type,this.isDefaultPrevented=e.defaultPrevented||void
0===e.defaultPrevented&&1===e.returnValue?Ee:Ne,this.target=e.target&&3===e.target.nodeType?
e.target.parentNode:e.target,this.currentTarget=e.currentTarget,this.relatedTarget=e.relatedTarg
Date.now(),this[w.expando]=!
0),w.Event.prototype={constructor:w.Event,isDefaultPrevented:Ne,isPropagationStopped:Ne,isImmedi
1,preventDefault:function(){var e=this.originalEvent;this.isDefaultPrevented=Ee,e&&!
this.isSimulated&&e.preventDefault(),stopPropagation:function(){var
e=this.originalEvent;this.isPropagationStopped=Ee,e&&!
this.isSimulated&&e.stopPropagation(),stopImmediatePropagation:function(){var
e=this.originalEvent;this.isImmediatePropagationStopped=Ee,e&&!
this.isSimulated&&e.stopImmediatePropagation(),this.stopPropagation()}}},w.each({altKey:!
0,bubbles:!0,cancelable:!0,changedTouches:!0,ctrlKey:!0,detail:!0,eventPhase:!0,metaKey:!
0,pageX:!0,pageY:!0,shiftKey:!0,view:!0,"char":!0,charCode:!0,key:!0,keyCode:!0,button:!
0,buttons:!0,clientX:!0,clientY:!0,offsetX:!0,offsetY:!0,pointerId:!0,pointerType:!0,screenX:!
0,screenY:!0,targetTouches:!0,toElement:!0,touches:!0,which:function(e){var t=e.button;return
null==e.which&&e.test(e.type)?null!=e.charCode?e.charCode:e.keyCode:!e.which&&void 0!
==t&&Ce.test(e.type)?1&t?1:2&t?3:4&t?
2:0:e.which}},w.event.addProp),w.each({mouseenter:"mouseover",mouseleave:"mouseout",pointerenter
{w.event.special[e]={delegateType:t,bindType:t,handle:function(e){var
n,r=this,i=e.relatedTarget,o=e.handleObj;return i&&(i===r||w.contains(r,i))||
(e.type=o.origType,n=o.handler.apply(this,arguments),e.type=t),n}},w.fn.extend({on:function(e,
{return Ae(this,e,t,n,r)},one:function(e,t,n,r){return Ae(this,e,t,n,r,1)},off:function(e,t,n)
{var r,i;if(e&&e.preventDefault&&e.handleObj)return
r=e.handleObj,w(e.delegateTarget).off(r.namespace?
r.origType+"."+r.namespace:r.origType,r.selector,r.handler),this;if("object"===typeof e){for(i
in e)this.off(i,t,e[i]);return this}return 1!==t&&"function"!==typeof t||(n=t,t=void 0),!
1===n&&(n=Ne),this.each(function(){w.event.remove(this,e,n,t)}));var De=/<(?!area|br|col|
embed|hr|img|input|link|meta|param)(([a-z][^\/\>\x20\t\r\n\f]*)|^>)*\s*</>/gi,Se=/<script|
<style|<link|<i|<le=/checked\s*(?:[^=]|=\s*.checked.)/i,je=/\s*<!(?:\s*\[CDATA\]|--)|(?:\s
\]|-->)\s*$</g>;function qe(e,t){return D(e,"table")&&D(1!==t.nodeType?t:t.firstChild,"tr"?
w(e).children("tbody")[0]||e:e)}function Oe(e){return e.type=(null!=e.getAttribute("type"))
+ "/" + e.type,e}function Pe(e){return "true/" === (e.type || "").slice(0,5)?
e.type=e.type.slice(5):e.removeAttribute("type"),e}function He(e,t){var
n,r,i,o,a,u,s,l;if(1===t.nodeType){if(K.hasData(e)&&(o=K.access(e),a=K.set(t,o),l=o.events))
{delete a.handle,a.events={};for(i in l)for(n=0,r=l[i].length;n<r;n++)w.event.add(t,i,l[i][n])}
J.hasData(e)&&(u=J.access(e),s=w.extend({},u),J.set(t,s))}function Ie(e,t){var
n=t.nodeName.toLowerCase();"input"===n&&de.test(e.type)?t.checked=e.checked:"input"!
==n&&"textarea"!==n||(t.defaultValue=e.defaultValue)}function Re(e,t,n,r){t=a.apply([],t);var
i,o,u,s,l,c,f=0,d=e.length,p=d-1,v=t[0],y=g(v);if(y|d>1&&"string"===typeof v&&!
h.checkClone&&Le.test(v))return e.each(function(i){var
o=e.eq(i);y&&t[0]=v.call(this,i,o.html()),Re(o,t,n,r)});if(d&&(i=be(t,e[0].ownerDocument,!
1,e,r),o=i.firstChild,1===i.childNodes.length&&(i=o),o||r))
{for(s=(u=w.map(ve(i,"script"),Oe)).length;f<d;f++)l=i,f!==p&&(l=w.clone(l,!0,!
0),s&&w.merge(u,ve(l,"script"))),n.call(e[f],l,f);if(s)for(c=u[u.length-1].ownerDocument,w.map(u
+)l=u[f],he.test(l.type||"")&&!K.access(l,"globalEval")&&w.contains(c,l)&&(l.src&&"module"!
==(l.type||"")).toLowerCase())?
w._evalUrl&&w._evalUrl(l.src):m(l.textContent.replace(je,""),c,l))return e}function Be(e,t,n)
{for(var r,i=t?w.filter(t,e):e,o=0,null!=(r=i[o]);o++)n||1!==r.nodeType||
w.cleanData(ve(r)),r.parentNode&&(n&&w.contains(r.ownerDocument,r)&&ye(ve(r,"script")),r.parentN
```

**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
e}w.extend({htmlPrefilter:function(e){return e.replace(De,"<$1></$2>")},clone:function(e,t,n){var r,i,o,a,u=e.cloneNode(!0),s=w.contains(e.ownerDocument,e);if(!h.noCloneChecked||1!==(e.nodeType&&11!==(e.nodeType|w.isXMLDoc(e)))for(a=ve(u),r=0,i=(o=ve(e)).length;r<i;r++)Ie(o[r],a[r]);if(t)if(n)for(o=o|ve(e),a=a|ve(u),r=0,i=o.length;r<i;r++)He(o[r],a[r]);else He(e,u);return(a=ve(u,"script")).length>0&&ye(a,!s&&ve(e,"script"),u),cleanData:function(e){for(var t,n,r,i=w.event.special,o=0;void 0!==(n=e[o]);o++)if(Y(n)){if(t=n[K.expando]){if(t.events)for(r in t.events)i[r]?w.event.remove(n,r):w.removeEvent(n,r,t.handle);n[K.expando]=void 0}n[J.expando]&&(n[J.expando]=void 0)}}},w.fn.extend({detach:function(e){return Be(this,e,!0)},remove:function(e){return Be(this,e)},text:function(e){return _(this,function(e){return void 0===e?w.text(this):this.empty().each(function(){1!==(this.nodeType&&11!==(this.nodeType&&9!==(this.nodeType||this.textContent=e))},null,e,arguments.length)},append:function(e){return Re(this,arguments,function(e){1!==(this.nodeType&&11!==(this.nodeType&&9!==(this.nodeType||qe(this,e).appendChild(e))},prepend:function(e){return Re(this,arguments,function(e){if(1!==(this.nodeType||11!==(this.nodeType||9!==(this.nodeType){var t=qe(this,e);t.insertBefore(e,t.firstChild)}})},before:function(e){return Re(this,arguments,function(e){this.parentNode&&this.parentNode.insertBefore(e,this)}}),after:function(e){return Re(this,arguments,function(e){this.parentNode&&this.parentNode.insertBefore(e,this.nextSibling)}}),empty:function(e){for(var e,t=0;null!=(e=this[t]);t++)1!==(e.nodeType&&(w.cleanData(ve(e,!1)),e.textContent="");return this},clone:function(e,t){return e=null!=e&&e,t=null!=t?e:t,this.map(function(e){return w.clone(this,e,t)})},html:function(e){return _(this,function(e){var t=this[0]||{,n=0,r=this.length;if(void 0===e&&1!==(this.nodeType)return t.innerHTML;if("string"==typeof e&&!Se.test(e)&&!ge[pe.exec(e)||["",""]][1].toLowerCase()){e=w.htmlPrefilter(e);try{for(;n<r;n++)1!==(t=this[n]||{).nodeType&&(w.cleanData(ve(t,!1)),t.innerHTML=e);t=0}catch(e){}}t&&this.empty().append(e),null,e,arguments.length)},replaceWith:function(e){var e=[];return Re(this,arguments,function(t){var n=this.parentNode;w.inArray(this,e)<0&&(w.cleanData(ve(this)),n&&n.replaceChild(t,this)),e}}),{w.fn[e]=function(e){for(var n,r=[],i=w(e),o=i.length-1,a=0;a<o;a++)n=a===o?this:this.clone(!0),w(i[a])[t](n),u.apply(r,n.get());return this.pushStack(r)}};var Me=new RegExp("(^|+re+)"(?![a-z%]+$),"i"),We=function(t){var n=t.ownerDocument.defaultView;return n&&n.opener||n=e,n.getComputedStyle(t)},$e=new RegExp(oe.join("|"),"i");!function(){function t(){if(c){l.style.cssText="position:absolute;left:-1111px;width:60px;margin-top:1px;padding:0;border:0",c.style.cssText="position:relative;display:block;box-sizing:border-box;overflow:scroll;margin:auto;border:1px;padding:1px;width:60%;top:1%",xe.appendChild(l).appendChild(c);var t=e.getComputedStyle(c);i="1%";!==(t.top,s=12===n(t.marginLeft),c.style.right="60%",u=36===n(t.right),o=36===n(t.width),c.style.pfunction n(e){return Math.round(parseFloat(e))}var i,o,a,u,s,l=r.createElement("div"),c=r.createElement("div");c.style&&(c.style.backgroundClip="content-box",c.cloneNode(!0).style.backgroundClip="content-box",h.clearCloneStyle="content-box"===c.style.backgroundClip,w.extend(h,{boxSizingReliable:function(){return t(),o},pixelBoxStyles:function(){return t(),u},pixelPosition:function(){return t(),i},reliableMarginLeft:function(){return t(),s},scrollboxSize:function(){return t(),a}})}function Fe(e,t,n){var r,i,o,a,u=e.style;return(n=n||We(e))&&("!"==(a=n.getPropertyValue(t)||n[t])||w.contains(e.ownerDocument,e)||a=w.style(e,t)),!h.pixelBoxStyles()&&Me.test(a)&&$e.test(t)&&(r=u.width,i=u.minWidth,o=u.maxWidth,u.minWidth=u.maxWidth,u.maxWidth=u.minWidth;a=a+"!":a)function ze(e,t){return{get:function(){if(!e())return(this.get=t).apply(this,arguments);delete this.get}}var _e=/^(none|table|(?![a-z%]+$))/,Ue=/^--/,Ve={position:"absolute",visibility:"hidden",display:"block"},Xe={letterSpacing:"0",fontWeight:"normal"},Ge(e){if(e in Ye)return e;var t=e[0].toUpperCase()+e.slice(1),n=Ye.length;while(n--){if((e=Ye[n]+t)in Ye)return e}function Ke(e){var t=w.cssProps[e];return t||(t=w.cssProps[e]=Ge(e)||e),t}function Je(e,t,n){var r=ie.exec(t);return r?Math.max(0,r[2]-(n||0))+r[3]||"px":t}function Ze(e,t,n,r,i,o){var a="width"===t?1:0,u=0,s=0;if(n===r?"border":"content")return 0;for(;a<4;a+=2)"margin"===n&&(s+=w.css(e,n+oe[a],!0,i)),r?("content"===n&&(s-=w.css(e,"padding"+oe[a],!0,i)),"margin"!==n&&(s-=w.css(e,"border"+oe[a]+"Width",!0,i))):(s+=w.css(e,"padding"+oe[a],!0,i),"padding"!==n?s+=w.css(e,"border"+oe[a]+"Width",!0,i):u+=w.css(e,"border"+oe[a]+"Width",!0,i));return!}}
```

**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
r&o>=0&&(s+=Math.max(0,Math.ceil(e["offset"+t[0].toUpperCase()+t.slice(1)]-o-s-u-.5))),s}
function et(e,t,n){var r=We(e),i=Fe(e,t,r),o="border-box"===w.css(e,"boxSizing",!
1,r),a=o;if(Me.test(i)){if(!n)return i;i="auto"}return a=a&&(h.boxSizingReliable())||
i===e.style[t]),("auto"===i?!parseFloat(i)&&"inline"===w.css(e,"display",!
1,r))&&(i=e["offset"+t[0].toUpperCase()+t.slice(1)],a=!0),(i=parseFloat(i)||0)+Ze(e,t,n||
(o?"border":"content"),a,r,i)+"px"}w.extend({cssHooks:{opacity:{get:function(e,t){if(t){var
n=Fe(e,"opacity");return""===n?"1":n}}},cssNumber:{animationIterationCount:!0,columnCount:!
0,fillOpacity:!0,flexGrow:!0,flexShrink:!0,fontWeight:!0,lineHeight:!0,opacity:!0,order:!
0,orphans:!0,widows:!0,zIndex:!0,zoom:!0},cssProps:{},style:function(e,t,n,r){if(e&&3!
===e.nodeType&&8!===e.nodeType&&e.style){var i,o,a,u=Q(t),s=Ue.test(t),l=e.style;if(s||
(t=Ke(u)),a=w.cssHooks[t]||w.cssHooks[u],void 0===n)return a&&"get"in a&&void 0!==(i=a.get(e,!
1,r))&&i:l[t];"string"==(o=typeof n)&&(i=ie.exec(n))&&i[1]&&(n=se(e,t,i),o="number"),null!
=n&&n===n&&("number"===o&&(n+=i&&i[3]||(w.cssNumber[u]?"":"px"))),h.clearCloneStyle||""!==(n||0!
==t.indexOf("background"))||(l[t]="inherit"),a&&"set"in a&&void 0===(n=a.set(e,n,r))||(s?
l.setProperty(t,n):l[t]=n)}},css:function(e,t,n,r){var i,o,a,u=Q(t);return Ue.test(t)||
(t=Ke(u)),(a=w.cssHooks[t]||w.cssHooks[u])&&"get"in a&&(i=a.get(e,!0,n)),void
0===i&&(i=Fe(e,t,r)),"normal"===i&&t in Xe&&(i=Xe[t]),""===n||n?(o=parseFloat(i),!0===n||
isFinite(o)?o||0:i:i)},w.each(["height","width"],function(e,t)
{w.cssHooks[t]={get:function(e,n,r){if(n)return!_.test(w.css(e,"display"))||
e.getClientRects().length&&e.getBoundingClientRect().width?et(e,t,r):ue(e,Ve,function(){return
et(e,t,r)}}),set:function(e,n,r){var i,o=We(e),a="border-box"===w.css(e,"boxSizing",!
1,o),u=r&&Ze(e,t,r,a,o);return a&&h.scrollboxSize()===o.position&&(u-
=Math.ceil(e["offset"+t[0].toUpperCase()+t.slice(1)]-parseFloat(o[t])-Ze(e,t,"border",!1,o)-.
5)),u&&(i=ie.exec(n))&&"px"!
==(i[3]||"px")&&(e.style[t]=n,n=w.css(e,t)),Je(e,n,u)}}},w.cssHooks.marginLeft=ze(h.reliableMar
{if(t)return parseFloat(Fe(e,"marginLeft"))||e.getBoundingClientRect().left-ue(e,{marginLeft:
0},function(){return e.getBoundingClientRect().left}))
+"px"}),w.each({margin:"",padding:"",border:"Width"},function(e,t)
{w.cssHooks[e+t]={expand:function(n){for(var r=0,i={},o="string"===typeof n?n.split(" "):
[n];r<4;r++)i[e+oe[r]+t]=o[r]||o[r-2]||o[0];return i},"margin"!
==e&&(w.cssHooks[e+t].set=Je)}},w.fn.extend({css:function(e,t){return _(this,function(e,t,n)
{var r,i,o={},a=0;if(Array.isArray(t)){for(r=We(e),i=t.length;a<i;a++)o[t[a]]=w.css(e,t[a],!
1,r);return o}return void 0!==(n?
w.style(e,t,n):w.css(e,t)),e,t,arguments.length>1)}},w.fn.delay=function(t,n){return t=w.fx?
w.fx.speeds[t]||t:t,n=n||"fx",this.queue(n,function(n,r){var
i=e.setTimeout(n,t);r.stop=function(){e.clearTimeout(i)}}),function(){var
e=r.createElement("input"),t=r.createElement("select").appendChild(r.createElement("option"));e.
==e.value,h.optSelected=t.selected,
(e=r.createElement("input")).value="t",e.type="radio",h.radioValue="t"===e.value}();var
tt,nt=w.expr.attrHandle;w.fn.extend({attr:function(e,t){return
_(this,w.attr,e,t,arguments.length>1)},removeAttr:function(e){return this.each(function()
{w.removeAttr(this,e)}}),w.extend({attr:function(e,t,n){var r,i,o=e.nodeType;if(3!==(o&&8!
==o&&2!==(o))return"undefined"===typeof e.getAttribute?w.prop(e,t,n):(l===o&&w.isXMLDoc(e)||
(i=w.attrHooks[t.toLowerCase()]||w.expr.match.bool.test(t)?tt:void 0)),void 0!==(n?null===n?
void 0:w.removeAttr(e,t):i&&"set"in i&&void 0!==(r=i.set(e,n,t)):r:
(e.setAttribute(t,n+""),n):i&&"get"in i&&null!==(r=i.get(e,t))&&r:null==(r=w.find.attr(e,t))&&
void 0:r)},attrHooks:{type:{set:function(e,t){if(!h.radioValue&&"radio"===t&&D(e,"input")}{var
n=e.value;return e.setAttribute("type",t),n&&(e.value=n),t}}},removeAttr:function(e,t){var
n,r=0,i=t&&t.match(I);if(i&&1===e.nodeType)while(n=i[r+
+])e.removeAttribute(n)}},tt={set:function(e,t,n){return!1===t?
w.removeAttr(e,n):e.setAttribute(n,n)},w.each(w.expr.match.bool.source.match(/\w+/
g),function(e,t){var n=nt[t]||w.find.attr;nt[t]=function(e,t,r){var
i,o,a=t.toLowerCase();return r||o=nt[a],nt[a]=i,i=null!==(n(e,t,r)?a:null,nt[a]=o),i)};var rt=/
^(?:input|select|textarea|button)$/i,it=/^(?:a|area)$/i;w.fn.extend({prop:function(e,t){return
_(this,w.prop,e,t,arguments.length>1)},removeProp:function(e){return this.each(function()
{delete this[w.propFix[e]||e]}}),w.extend({prop:function(e,t,n){var r,i,o=e.nodeType;if(3!
==o&&8!==(o&&2!==(o))return 1===o&&w.isXMLDoc(e)||t=w.propFix[t]||t,i=w.propHooks[t],void 0!==(n?
i&&"set"in i&&void 0!==(r=i.set(e,n,t)):r:e[t]=n:i&&"get"in i&&null!==(r=i.get(e,t))&&
r:e[t]),propHooks:{tabIndex:{get:function(e){var t=w.find.attr(e,"tabindex");return t?

```

**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
parseInt(t,10):rt.test(e.nodeName)||it.test(e.nodeName)&&e.href?0:-1}}},propFix:
{"for":"htmlFor","class":"className"}},h.optSelected||(w.propHooks.selected={get:function(e)
{var t=e.parentNode;return t&&t.parentNode&&t.parentNode.selectedIndex,null},set:function(e)
{var
t=e.parentNode;t&&(t.selectedIndex,t.parentNode&&t.parentNode.selectedIndex)}},w.each(["tabInde
{w.propFix[this.toLowerCase()]=this};function ot(e){return(e.match(I)||[]).join(" ")}function
at(e){return e.getAttribute&&e.getAttribute("class")||""}function ut(e){return
Array.isArray(e)?e:"string"===typeof e?e.match(I)||[]:[]}w.fn.extend({addClass:function(e){var
t,n,r,i,o,a,u,s=0;if(g(e))return this.each(function(t)
{w(this).addClass(e.call(this,t,at(this)))});if((t=ut(e)).length)while(n=this[s+
+])if(i=at(n),r=l===n.nodeType&&" "+ot(i)+" "){a=0;while(o=t[a++])r.indexOf(" "+o+"
")<0&&(r+=o+" ");i!==(u=ot(r))&&n.setAttribute("class",u)}return this},removeClass:function(e)
{var t,n,r,i,o,a,u,s=0;if(g(e))return this.each(function(t)
{w(this).removeClass(e.call(this,t,at(this)))});if(!arguments.length)return
this.attr("class","");if((t=ut(e)).length)while(n=this[s++])if(i=at(n),r=l===n.nodeType&&"
"+ot(i)+" "){a=0;while(o=t[a++])while(r.indexOf(" "+o+" ")>-1)r=r.replace(" "+o+" ","");i!
==(u=ot(r))&&n.setAttribute("class",u)}return this},toggleClass:function(e,t){var n=typeof
e,r="string"===n||Array.isArray(e);return"boolean"===typeof t&&r?t?
this.addClass(e):this.removeClass(e):g(e)?this.each(function(n)
{w(this).toggleClass(e.call(this,n,at(this),t),t)}):this.each(function(){var t,i,o,a;if(r)
{i=0,o=w(this),a=ut(e);while(t=a[i++])o.hasClass(t)?o.removeClass(t):o.addClass(t)}else void 0!
==e&&"boolean"!==n||
((t=at(this))&&K.set(this,"__className",t),this.setAttribute&&this.setAttribute("class",t||l
===e?"":K.get(this,"__className")||""))},hasClass:function(e){var t,n,r=0;t=" "+e+"
";while(n=this[r++])if(l===n.nodeType&&" "+ot(at(n))+ " ").indexOf(t)>-1)return!0;return!
1});var st=/\r/g;w.fn.extend({val:function(e){var t,n,r,i=this[0];if(arguments.length)return
r=g(e),this.each(function(n){var i;l===this.nodeType&&(null==(i=r?
e.call(this,n,w(this).val()):e)?i="":"number"===typeof i?
i+="":Array.isArray(i)&&(i=w.map(i,function(e){return null==e?"":e+""})),
(t=w.valHooks[this.type]||w.valHooks[this.nodeName.toLowerCase()])&&"set"in t&&void 0!
==t.set(this,i,"value")||(this.value=i)});if(i)return(t=w.valHooks[i.type]||
w.valHooks[i.nodeName.toLowerCase()])&&"get"in t&&void 0!==(n=t.get(i,"value")))?
n:"string"===typeof(n=i.value)?n.replace(st,""):null==n?"":n})),w.extend({valHooks:{option:
{get:function(e){var t=w.find.attr(e,"value");return null!=t?t:ot(w.text(e))},select:
{get:function(e){var t,n,r,i=e.options,o=e.selectedIndex,a="select-one"===e.type,u=a?null:
[],s=a?o+1:i.length;for(r=o<0?s:a;o<0;r<s;r++)if(((n=i[r]).selected||r===o)&&!n.disabled&&(!
n.parentNode.disabled||!D(n.parentNode,"optgroup"))){if(t=w(n).val(),a)return t;u.push(t)}
return u},set:function(e,t){var n,r,i=e.options,o=w.makeArray(t),a=i.length;while(a--
)((r=i[a]).selected=w.inArray(w.valHooks.option.get(r),o)>-1)&&(n=!0);return n||
(e.selectedIndex=-1),o}}}),w.each(["radio","checkbox"],function()
{w.valHooks[this]={set:function(e,t){if(Array.isArray(t))return
e.checked=w.inArray(w(e).val(),t)>-1}},h.checkOn||(w.valHooks[this].get=function(e){return
null===e.getAttribute("value")?"on":e.value}}),h.focusin="onfocusin"in e;var lt=/
^(:focusin|focus|focusout|blur)$/,ct=function(e){e.stopPropagation();w.extend(w.event,
{trigger:function(t,n,i,o){var a,u,s,l,c,d,p,h,y=[i||r],m=f.call(t,"type")?
t.type:t,b=f.call(t,"namespace")?t.namespace.split("."):[];if(u=h=s=i=i||r,3!==(i.nodeType&&8!
==i.nodeType&&
lt.test(m+w.event.triggered)&&(m.indexOf(".")>-1&&(m=(b=m.split(".")).shift(),b.sort()),c=m.inde
t:new w.Event(m,"object"===typeof t&&t),t.isTrigger=0?
2:3,t.namespace=b.join("."),t.rnamespace=t.namespace?new RegExp("(^|\\.)"+b.join("\\.(?:.*\\
\\.|)"+")"+"(\\.|$)"):null,t.result=void 0,t.target||t.target=i,n=null==n?[t]:w.makeArray(n,
[t]),p=w.event.special[m]||{},{o||p.trigger||!1!=p.trigger.apply(i,n))){if(!o&&!p.noBubble&&
v(i)){for(l=p.delegateType||m,lt.test(l+m)||
(u=u.parentNode);u;u=u.parentNode)y.push(u),s=u;s===(i.ownerDocument||
r)&&y.push(s.defaultView||s.parentWindow||e)}a=0;while((u=y[a++])&&
t.isPropagationStopped())h=u,t.type=a>1?l:p.bindType||m,(d=(K.get(u,"events")||{}))
[t.type]&&K.get(u,"handle"))&&d.apply(u,n),(d=c&&u[c])&&d.apply&&Y(u)&&(t.result=d.apply(u,n),!
l==t.result&&t.preventDefault());return t.type=m,o||t.isDefaultPrevented()||p._default&&1!
==p._default.apply(y.pop(),n)||!Y(i)||c&&g(i[m])&&!
```



**Password Management: Hardcoded Password****Critical****Package: Projects.Github.ATSPM.SPM.Scripts****Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)****Critical**

```
v(i)&&((s=i[c])&&(i[c]=null),w.event.triggered=m,t.isPropagationStopped())&&h.addEventListener(m,
(),t.isPropagationStopped())&&h.removeEventListener(m,ct),w.event.triggered=void
0,s&&(i[c]=s)),t.result}},simulate:function(e,t,n){var r=w.extend(new w.Event,n,
{type:e,isSimulated:!0});w.event.trigger(r,null,t)}},w.fn.extend({trigger:function(e,t)
{return this.each(function(){w.event.trigger(e,t,this)}),triggerHandler:function(e,t){var
n=this[0];if(n)return w.event.trigger(e,t,n,!0)}},h.focusin||
w.each({focus:"focusin",blur:"focusout"},function(e,t){var n=function(e)
{w.event.simulate(t,e.target,w.event.fix(e));w.event.special[t]={setup:function(){var
r=this.ownerDocument||this,i=K.access(r,t);i||r.addEventListener(e,n,!0),K.access(r,t,(i||
0)+1)},teardown:function(){var r=this.ownerDocument||this,i=K.access(r,t)-1;i?K.access(r,t,i):
(r.removeEventListener(e,n,!0),K.remove(r,t))}};var ft=/\[\]\$/,dt=/\r?\n/g,pt=/^(?:submit|
button|image|reset|file)\$/i,ht=/^(?:input|select|textarea|keygen)/i;function gt(e,t,n,r){var
i;if(Array.isArray(t))w.each(t,function(t,i){n||ft.test(e)?r(e,i):gt(e+"["+i+"]",t[i],n,r)});else if(n||"object"!==b(t))r(e,t);else for(i in
t)gt(e+"["+i+"]",t[i],n,r)}w.param=function(e,t){var n,r=[],i=function(e,t){var n=g(t)?
t():t;r[r.length]=encodeURIComponent(e)
+"="+encodeURIComponent(null==n?"":n)};if(Array.isArray(e)||e.jquery&&!
w.isPlainObject(e))w.each(e,function(){i(this.name,this.value)});else for(n in
e)gt(n,e[n],t,i);return r.join("&")},w.fn.extend({serialize:function(){return
w.param(this.serializeArray())},serializeArray:function(){return this.map(function(){var
e=w.prop(this,"elements");return e?w.makeArray(e):this}).filter(function(){var
e=this.type;return this.name&&!w(this).is(":disabled")&&ht.test(this.nodeName)&&!
pt.test(e)&&(this.checked||!de.test(e))}).map(function(e,t){var n=w(this).val();return null==n?
null:Array.isArray(n)?w.map(n,function(e){return{name:t.name,value:e.replace(dt,"\\r\\n")}}):
{name:t.name,value:n.replace(dt,"\\r\\n")}).get()}},w.fn.extend({wrapAll:function(e){var
t;return this[0]&&(g(e)&&(e=e.call(this[0])),t=w(e,this[0].ownerDocument).eq(0).clone(!
0),this[0].parentNode&&t.insertBefore(this[0]),t.map(function(){var
e=this;while(e.firstChild)e=e.firstChild;return
e}).append(this),this),wrapInner:function(e){return g(e)?this.each(function(t)
{w(this).wrapInner(e.call(this,t))}):this.each(function(){var
t=w(this),n=t.contents();n.length?n.wrapAll(e):t.append(e)}),wrap:function(e){var
t=g(e);return this.each(function(n){w(this).wrapAll(t?e.call(this,n):e)}),unwrap:function(e)
{return this.parent(e).not("body").each(function(){
w(this).replaceWith(this.childNodes)},this)},w.expr.pseudos.hidden=function(e){return!
w.expr.pseudos.visible(e)},w.expr.pseudos.visible=function(e){return!!(e.offsetWidth||
e.offsetHeight||e.getClientRects().length)},h.createHTMLDocument=function(){var
e=r.implementation.createHTMLDocument("").body;return e.innerHTML="<form></form><form></form>",
2===e.childNodes.length(),w.parseHTML=function(e,t,n){if("string"!==typeof
e)return[];"boolean"===typeof t&&(n=t,t=!1);var i,o,a;return t||(h.createHTMLDocument?
((i=(t=r.implementation.createHTMLDocument(""))).createElement("base")).href=r.location.href,t.he
n&&[[],o?[t.createElement(o[1])]:
(o=be([e],t,a),a&&a.length&&w(a).remove(),w.merge([],o.childNodes)),w.offset={setOffset:functio
{var
r,i,o,a,u,s,l,c=w.css(e,"position"),f=w(e),d={};"static"===c&&(e.style.position="relative"),u=f.
l("absolute"===c||"fixed"===c)&&(o+s).indexOf("auto")>-1?(a=(r=f.position()).top,i=r.left):
(a=parseFloat(o)||0,i=parseFloat(s)||0),g(t)&&(t=t.call(e,n,w.extend({},u))),null!
=t.top&&(d.top=t.top-u.top+a),null!=t.left&&(d.left=t.left-u.left+i),"using"in t?
t.using.call(e,d):f.css(d)},w.fn.extend({offset:function(e){if(arguments.length)return void
0===e?this:this.each(function(t){w.offset.setOffset(this,e,t)});var t,n,r=this[0];if(r)return
r.getClientRects().length?(t=r.getBoundingClientRect(),n=r.ownerDocument.defaultView,
{top:t.top+n.pageYOffset,left:t.left+n.pageXOffset}):{top:0,left:0},position:function()
{if(this[0]){var e,t,n,r=this[0],i={top:0,left:
0};if("fixed"===w.css(r,"position"))t=r.getBoundingClientRect();else{t=this.offset(),n=r.ownerDo
n.documentElement;while(e&&(e===n.body||
e===n.documentElement)&&"static"===w.css(e,"position"))e=e.parentNode;e&&e!
===r&&l===e.nodeType&&((i=w(e).offset()).top+=w.css(e,"borderTopWidth",!
0),i.left+=w.css(e,"borderLeftWidth",!0))}return{top:t.top-i.top-w.css(r,"marginTop",!
0),left:t.left-i.left-w.css(r,"marginLeft",!0)}},offsetParent:function(){return
this.map(function(){var
```

<b>Password Management: Hardcoded Password</b>	<b>Critical</b>
<b>Package: Projects.Github.ATSPM.SPM.Scripts</b>	
<b>Projects/Github/ATSPM/SPM/Scripts/jquery-3.3.1.slim.min.js, line 2 (Password Management: Hardcoded Password)</b>	<b>Critical</b>

```
e=this.offsetParent;while(e&&"static"===w.css(e,"position"))e=e.offsetParent;return e||
xe)}}),w.each({scrollLeft:"pageXOffset",scrollTop:"pageYOffset"},function(e,t){var
n="pageYOffset"===t;w.fn[e]=function(r){return _(this,function(e,r,i){var o;if(v(e)?o=e:
9===e.nodeType&&(o=e.defaultView),void 0===i)return o?o[t]:e[r];o.o.scrollTo(n?
o.pageXOffset:i,n?
i:o.pageYOffset):e[r]=i},e,r,arguments.length)}}),w.each(["top","left"],function(e,t)
{w.cssHooks[t]=ze(h.pixelPosition,function(e,n){if(n)return n=Fe(e,t),Me.test(n)?
w(e).position()[t]+"px":n})),w.each({Height:"height",Width:"width"},function(e,t)
{w.each({padding:"inner"+e,content:t,"":"outer"+e},function(n,r){w.fn[r]=function(i,o){var
a=arguments.length&&(n||"boolean"!==typeof i),u=n||(!0===i||!0===o?"margin":"border");return
_(this,function(t,n,i){var o;return v(t)?0===r.indexOf("outer")?
t["inner"+e]:t.document.documentElement["client"+e]:9===t.nodeType?
(o=t.documentElement,Math.max(t.body["scroll"+e],o["scroll"+e],t.body["offset"+e],o["offset"+e],
0===i?w.css(t,n,u):w.style(t,n,i,u)),t,a?i:void 0,a)}})),w.each("blur focus focusin focusout
resize scroll click dblclick mousedown mouseup mousemove mouseover mouseout mouseenter
mouseleave change select submit keydown keypress keyup contextmenu".split(" "),function(e,t)
{w.fn[t]=function(e,n){return arguments.length>0?
this.on(t,null,e,n):this.trigger(t)}}),w.fn.extend({hover:function(e,t){return
this.mouseenter(e).mouseleave(t||e)}),w.fn.extend({bind:function(e,t,n){return
this.on(e,null,t,n)},unbind:function(e,t){return this.off(e,null,t)},delegate:function(e,t,n,r)
{return this.on(t,e,n,r)},undelegate:function(e,t,n){return 1===arguments.length?
this.off(e,"*"):this.off(t,e||"*",n)}),w.proxy=function(e,t){var n,r,i;if("string"===typeof
t&&(n=e[t],t=e=n),g(e))return r=o.call(arguments,2),i=function(){return e.apply(t||
this,r.concat(o.call(arguments)))},i.guid=e.guid=e.guid||w.guid++,i},w.holdReady=function(e){e?
w.readyWait++:w.ready(!
0)},w.isArray=Array.isArray,w.parseJSON=JSON.parse,w.nodeName=D,w.isFunction=g,w.isWindow=v,w.ca
{var t=w.type(e);return("number"===t||"string"===t)&&!isNaN(e-
parseFloat(e))},"function"===typeof define&&define.amd&&define("jquery",[],function(){return
w});var vt=e.jQuery,yt=e.$;return w.noConflict=function(t){return e.$===w&&(e.
$=yt),t&&e.jQuery===w&&(e.jQuery=vt),w},t||e.jQuery=e.$=w),w)});
3
4 undefined
5 undefined
6 undefined
7 undefined
```

<b>Password Management: Hardcoded Password</b>	<b>High</b>
<b>Package: AlexPilotti.FTPS.Client</b>	
<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 503 (Password Management: Hardcoded Password)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Security Features  
**Scan Engine:** SCA (Semantic)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**Sink:** NetworkCredential()  
**Enclosing Method:** Connect()  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:503



**Password Management: Hardcoded Password****High****Package: AlexPilotti.FTPS.Client****Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 503  
(Password Management: Hardcoded Password)****High****Taint Flags:**

```
500
501 // Anonymous authentication
502 if (credential == null)
503 credential = new NetworkCredential(anonUsername, anonPassword);
504
505 if (timeout != null)
506 this.timeout = timeout.Value;
```

**Package: GenerateControllerEventLogObjectText****Projects/Github/ATSPM/GenerateControllerEventLogObjectText/Program.cs, line  
21 (Password Management: Hardcoded Password)****High****Issue Details****Kingdom:** Security Features  
**Scan Engine:** SCA (Semantic)**Audit Details****Analysis** Not an Issue**Sink Details****Sink:** set\_Item()  
**Enclosing Method:** Main()  
**File:** Projects/Github/ATSPM/GenerateControllerEventLogObjectText/Program.cs:21  
**Taint Flags:**

```
18 System.Data.SqlClient.SqlConnectionStringBuilder builder =
19 new System.Data.SqlClient.SqlConnectionStringBuilder();
20 builder["Data Source"] = "spmserver";
21 builder["Password"] = "dontshareme";
22 builder["Persist Security Info"] = true;
23 builder["User ID"] = "datareader";
24 builder["Initial Catalog"] = "MOE";
```



## Password Management: Password in Configuration File (50 issues)

### Abstract

Storing a plaintext password in a configuration file could result in a system compromise.

### Explanation

Storing a plaintext password in a configuration file allows anyone who can read the file access to the password-protected resource. Developers sometimes believe that they cannot defend the application from someone who has access to the configuration, but this attitude makes an attacker's job easier. Good password management guidelines require that a password never be stored in plaintext.

### Recommendation

A password should never be stored in plaintext. Instead, the password should be entered by an administrator when the system starts. If that approach is impractical, a less secure but often adequate solution is to obfuscate the password and scatter the de-obfuscation material around the system so that an attacker has to obtain and correctly combine multiple system resources to decipher the password. Microsoft(R) provides a tool that can be used in conjunction with the Windows Data Protection application programming interface (DPAPI) to protect sensitive application entries in configuration files [1].

### Issue Summary

### Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
Password Management: Password in Configuration File	50	0	0	50
<b>Total</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>50</b>

### Password Management: Password in Configuration File

High

Package: Projects.Github.ATSPM.ArchiveMetricData

Projects/Github/ATSPM/ArchiveMetricData/App.config, line 15 (Password Management: Password in Configuration File)

High

### Issue Details

Kingdom: Environment

Scan Engine: SCA (Configuration)



<b>Password Management: Password in Configuration File</b>	<b>High</b>
--	-------------

**Package:** Projects.Github.ATSPM.ArchiveMetricData

<b>Projects/Github/ATSPM/ArchiveMetricData/App.config, line 15 (Password Management: Password in Configuration File)</b>	<b>High</b>
--	-------------

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/ArchiveMetricData/App.config:15  
**Taint Flags:**

```

12 <add key="ClientSettingsProvider.ServiceUri" value="" />
13 </appSettings>
14 <connectionStrings>
15 <add name="SPM" connectionString="data source=SpmServer;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=SpmPassword;Connection
Timeout=120;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
16 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
17 </connectionStrings>
18 <startup>

```

**Package:** Projects.Github.ATSPM.ArchiveMetricData.bin.Debug

<b>Projects/Github/ATSPM/ArchiveMetricData/bin/Debug/AggregateATSPMData.exe.config, line 15 (Password Management: Password in Configuration File)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**yxing:** Thu Apr 11 2019 11:52:05 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/ArchiveMetricData/bin/Debug/AggregateATSPMData.exe.config:15  
**Taint Flags:**

```

12 <add key="ClientSettingsProvider.ServiceUri" value="" />
13 </appSettings>
14 <connectionStrings>
15 <add name="SPM" connectionString="data source=SpmServer;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=SpmPassword;Connection
Timeout=120;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
16 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />

```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
--	-------------

**Package: Projects.Github.ATSPM.ArchiveMetricData.bin.Debug**

<b>Projects/Github/ATSPM/ArchiveMetricData/bin/Debug/AggregateATSPMData.exe.config, line 15 (Password Management: Password in Configuration File)</b>	<b>High</b>
---	-------------

```
17 </connectionStrings>
18 <startup>
```

**Package: Projects.Github.ATSPM.ConvertDBForHistoricalConfigurationsTests**

<b>Projects/Github/ATSPM/ConvertDBForHistoricalConfigurationsTests/app.config, line 9 (Password Management: Password in Configuration File)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/ConvertDBForHistoricalConfigurationsTests/app.config:9  
**Taint Flags:**

```
6 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 --></configSections>
7 <connectionStrings>
8 <!--<add name="SPM" connectionString="Data Source=MOE;Initial Catalog=MOETest;Persist
Security Info=True;integrated security=True;MultipleActiveResultSets=True;Connection
Timeout=500;App=EntityFramework" providerName="System.Data.SqlClient" />-->
9 <add name="SPM" connectionString="data source=AtspmServer;initial catalog=MOE1;Persist
Security Info=True;User ID=SPM;Password=SPM;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
10 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
11 </connectionStrings>
12 <entityFramework>
```

**Package: Projects.Github.ATSPM.ConvertDBForHistoricalConfigurationsTests.bin.Debug**

<b>Projects/Github/ATSPM/ConvertDBForHistoricalConfigurationsTests/bin/Debug/ConvertDBForHistoricalConfigurationsTests.dll.config, line 9 (Password Management: Password in Configuration File)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.ConvertDBForHistoricalConfigurationsTests.bin.Debug</b>	
<b>Projects/Github/ATSPM/ConvertDBForHistoricalConfigurationsTests/bin/Debug/ConvertDBForHistoricalConfigurationsTests.dll.config, line 9 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/ConvertDBForHistoricalConfigurationsTests/bin/Debug/ConvertDBForHistoricalConfigurationsTests.dll.config:9  
**Taint Flags:**

```

6 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/fwlink/?LinkID=237468 --></configSections>
7 <connectionStrings>
8 <!--<add name="SPM" connectionString="Data Source=MOE;Initial Catalog=MOETest;Persist Security Info=True;integrated security=True;MultipleActiveResultSets=True;Connection Timeout=500;App=EntityFramework" providerName="System.Data.SqlClient" />-->
9 <add name="SPM" connectionString="data source=AtspmServer;initial catalog=MOE1;Persist Security Info=True;User ID=SPM;Password=SPM;MultipleActiveResultSets=True;App=EntityFramework" providerName="System.Data.SqlClient" />
10 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
11 </connectionStrings>
12 <entityFramework>

```

<b>Package: Projects.Github.ATSPM.DecodePeekLogs</b>	
<b>Projects/Github/ATSPM/DecodePeekLogs/App.config, line 9 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/DecodePeekLogs/App.config:9  
**Taint Flags:**

```

6 </sectionGroup>
7 </configSections>
8 <connectionStrings>
9 <add name="DecodePeekLogs.Properties.Settings.SPM" connectionString="Data Source=MOE;Initial Catalog=moe;User ID=spm;Password=CHANGEME" providerName="System.Data.SqlClient" />
10 </connectionStrings>
11 <startup>

```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.DecodePeekLogs</b>	
<b>Projects/Github/ATSPM/DecodePeekLogs/App.config, line 9 (Password Management: Password in Configuration File)</b>	<b>High</b>

```
12 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />
```

<b>Package: Projects.Github.ATSPM.DecodePeekLogs.bin.Debug</b>	
<b>Projects/Github/ATSPM/DecodePeekLogs/bin/Debug/DecodePeekLogs.exe.config, line 9 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
 These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/DecodePeekLogs/bin/Debug/DecodePeekLogs.exe.config:9  
**Taint Flags:**

```
6 </sectionGroup>
7 </configSections>
8 <connectionStrings>
9 <add name="DecodePeekLogs.Properties.Settings.SPM" connectionString="Data
Source=MOE;Initial Catalog=moe;User ID=spm;Password=CHANGEME"
providerName="System.Data.SqlClient" />
10 </connectionStrings>
11 <startup>
12 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />
```

<b>Package: Projects.Github.ATSPM.DecodeSiemensLogs</b>	
<b>Projects/Github/ATSPM/DecodeSiemensLogs/App.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
 These will be encrypted on the production machines

#### Sink Details





<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.DecodeSiemensLogs</b>	
<b>Projects/Github/ATSPM/DecodeSiemensLogs/App.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

**File:** Projects/Github/ATSPM/DecodeSiemensLogs/App.config:11

**Taint Flags:**

```

8 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
9 </configSections>
10 <connectionStrings>
11 <add name="DecodeSiemensLogs.Properties.Settings.SPM" connectionString="Data
Source=MOE;Initial Catalog=MOE;User ID=SPM;Password=CHANGEME"
providerName="System.Data.SqlClient" />
12 </connectionStrings>
13 <startup>
14 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />

```

<b>Package: Projects.Github.ATSPM.DecodeSiemensLogs.bin.Debug</b>	
<b>Projects/Github/ATSPM/DecodeSiemensLogs/bin/Debug/DecodeSiemensLogs.exe.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

**Issue Details**

**Kingdom:** Environment

**Scan Engine:** SCA (Configuration)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

**Sink Details**

**File:** Projects/Github/ATSPM/DecodeSiemensLogs/bin/Debug/DecodeSiemensLogs.exe.config:11  
**Taint Flags:**

```

8 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
9 </configSections>
10 <connectionStrings>
11 <add name="DecodeSiemensLogs.Properties.Settings.SPM" connectionString="Data
Source=MOE;Initial Catalog=MOE;User ID=SPM;Password=CHANGEME"
providerName="System.Data.SqlClient" />
12 </connectionStrings>
13 <startup>
14 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />

```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.DecodeTrafficwareLogs</b>	
<b>Projects/Github/ATSPM/DecodeTrafficwareLogs/App.config, line 20 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/DecodeTrafficwareLogs/App.config:20  
**Taint Flags:**

```

17 </providers>
18 </entityFramework>
19 <connectionStrings>
20 <add name="SPM" connectionString="Data Source=MOE;Initial Catalog=MOE;Persist Security
Info=True;User ID=SPM;Password=CHANGEME" providerName="System.Data.SqlClient" />
21 <add name="DecodeTrafficwareLogs.Properties.Settings.SPM" connectionString="Data
Source=MOE;Initial Catalog=moe;User ID=spm;Password=CHANGEME"
providerName="System.Data.SqlClient" />
22 </connectionStrings>
23

```

<b>Projects/Github/ATSPM/DecodeTrafficwareLogs/App.config, line 21 (Password Management: Password in Configuration File)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/DecodeTrafficwareLogs/App.config:21  
**Taint Flags:**

```

18 </entityFramework>
19 <connectionStrings>
20 <add name="SPM" connectionString="Data Source=MOE;Initial Catalog=MOE;Persist Security
Info=True;User ID=SPM;Password=CHANGEME" providerName="System.Data.SqlClient" />
21 <add name="DecodeTrafficwareLogs.Properties.Settings.SPM" connectionString="Data
Source=MOE;Initial Catalog=moe;User ID=spm;Password=CHANGEME"

```



**Password Management: Password in Configuration File****High****Package: Projects.Github.ATSPM.DecodeTrafficwareLogs****Projects/Github/ATSPM/DecodeTrafficwareLogs/App.config, line 21 (Password Management: Password in Configuration File)****High**

```
providerName="System.Data.SqlClient" />
22 </connectionStrings>
23
24 <runtime>
```

**Package: Projects.Github.ATSPM.DecodeTrafficwareLogs.bin.Debug****Projects/Github/ATSPM/DecodeTrafficwareLogs/bin/Debug/DecodeTrafficwareLogs.exe.config, line 20 (Password Management: Password in Configuration File)****High****Issue Details**

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

**Sink Details**

**File:** Projects/Github/ATSPM/DecodeTrafficwareLogs/bin/Debug/DecodeTrafficwareLogs.exe.config:20  
**Taint Flags:**

```
17 </providers>
18 </entityFramework>
19 <connectionStrings>
20 <add name="SPM" connectionString="Data Source=MOE;Initial Catalog=MOE;Persist Security
Info=True;User ID=SPM;Password=CHANGEME" providerName="System.Data.SqlClient" />
21 <add name="DecodeTrafficwareLogs.Properties.Settings.SPM" connectionString="Data
Source=MOE;Initial Catalog=moe;User ID=spm;Password=CHANGEME"
providerName="System.Data.SqlClient" />
22 </connectionStrings>
23
```

**Projects/Github/ATSPM/DecodeTrafficwareLogs/bin/Debug/DecodeTrafficwareLogs.exe.config, line 21 (Password Management: Password in Configuration File)****High****Issue Details**

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.DecodeTrafficwareLogs.bin.Debug</b>	
<b>Projects/Github/ATSPM/DecodeTrafficwareLogs/bin/Debug/DecodeTrafficwareLogs.exe.config, line 21 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Audit Comments

These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/DecodeTrafficwareLogs/bin/Debug/DecodeTrafficwareLogs.exe.config:21  
**Taint Flags:**

```

18 </entityFramework>
19 <connectionStrings>
20 <add name="SPM" connectionString="Data Source=MOE;Initial Catalog=MOE;Persist Security
Info=True;User ID=SPM;Password=CHANGEME" providerName="System.Data.SqlClient" />
21 <add name="DecodeTrafficwareLogs.Properties.Settings.SPM" connectionString="Data
Source=MOE;Initial Catalog=moe;User ID=spm;Password=CHANGEME"
providerName="System.Data.SqlClient" />
22 </connectionStrings>
23
24 <runtime>

```

<b>Package: Projects.Github.ATSPM.FTPFromOneController</b>	
<b>Projects/Github/ATSPM/FTPFromOneController/app.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/FTPFromOneController/app.config:11  
**Taint Flags:**

```

8 </sectionGroup>
9 </configSections>
10 <connectionStrings>
11 <add name="FTPFromOneController.Properties.Settings.ConnectionString"
connectionString="Data Source=MOE;Initial Catalog=MOE;User ID=SPM;Password=CHANGEME"
providerName="System.Data.SqlClient" />
12 </connectionStrings>
13 <startup>
14 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />

```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.FTPFromOneController.bin.Debug</b>	
<b>Projects/Github/ATSPM/FTPFromOneController/bin/Debug/FTPFromOneController.exe.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**yxing:** Thu Apr 11 2019 11:52:33 GMT-0600 (MDT)  
 These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/FTPFromOneController/bin/Debug/FTPFromOneController.exe.config:11  
**Taint Flags:**

```

8 </sectionGroup>
9 </configSections>
10 <connectionStrings>
11 <add name="FTPFromOneController.Properties.Settings.ConnectionString"
connectionString="Data Source=MOE;Initial Catalog=MOE;User ID=SPM;Password=CHANGEME"
providerName="System.Data.SqlClient" />
12 </connectionStrings>
13 <startup>
14 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />

```

<b>Package: Projects.Github.ATSPM.FTPfromAllControllersTests.bin.Debug</b>	
<b>Projects/Github/ATSPM/FTPfromAllControllersTests/bin/Debug/FTPfromAllControllers.exe.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
 These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/FTPfromAllControllersTests/bin/Debug/FTPfromAllControllers.exe.config:12  
**Taint Flags:**

```

9 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
10 </configSections>

```



**Password Management: Password in Configuration File****High****Package: Projects.Github.ATSPM.FTPfromAllControllersTests.bin.Debug****Projects/Github/ATSPM/FTPfromAllControllersTests/bin/Debug/FTPfromAllControllers.exe.config, line 12 (Password Management: Password in Configuration File)****High**

```
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=srwtcns54;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13 </connectionStrings>
14
15 <appSettings>
```

**Package: Projects.Github.ATSPM.FTPfromasc3****Projects/Github/ATSPM/FTPfromasc3/app.config, line 12 (Password Management: Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details****Analysis** Not an Issue**Audit Comments**

**dlowe:** Fri Jan 04 2019 13:19:03 GMT-0700 (MST)  
These will be encrypted on the production machines

**Sink Details****File:** Projects/Github/ATSPM/FTPfromasc3/app.config:12**Taint Flags:**

```
9 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
10 </configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=srwtcns54;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13 </connectionStrings>
14
15 <appSettings>
```

**Package: Projects.Github.ATSPM.FTPfromasc3.bin.Debug****Projects/Github/ATSPM/FTPfromasc3/bin/Debug/FTPfromAllControllers.exe.config, line 12 (Password Management: Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)

<b>Password Management: Password in Configuration File</b>	<b>High</b>
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Package: Projects.Github.ATSPM.FTPfromasc3.bin.Debug

<b>Projects/Github/ATSPM/FTPfromasc3/bin/Debug/FTPfromAllControllers.exe.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>
--	-------------

#### Audit Details

Analysis Not an Issue

#### Audit Comments

dlowe@utah.gov: Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/FTPfromasc3/bin/Debug/FTPfromAllControllers.exe.config:12  
**Taint Flags:**

```

9 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
10 </configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=srwtcns54;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13 </connectionStrings>
14
15 <appSettings>
```

Package: Projects.Github.ATSPM.FileByFileASC3Decoder

<b>Projects/Github/ATSPM/FileByFileASC3Decoder/App.config, line 6 (Password Management: Password in Configuration File)</b>	<b>High</b>
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#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

dlowe@utah.gov: Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/FileByFileASC3Decoder/App.config:6  
**Taint Flags:**

```

3 <configSections>
4 </configSections>
5 <connectionStrings>
6 <add name="SPM" connectionString="data source=SPMServer;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
7 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
```



<b>Password Management: Password in Configuration File</b>		<b>High</b>
<b>Package: Projects.Github.ATSPM.FileByFileASC3Decoder</b>		
<b>Projects/Github/ATSPM/FileByFileASC3Decoder/App.config, line 6 (Password Management: Password in Configuration File)</b>		<b>High</b>
<pre> 8 &lt;/connectionStrings&gt; 9 &lt;startup&gt; </pre>		
<b>Package: Projects.Github.ATSPM.FileByFileASC3Decoder.bin.Debug</b>		
<b>Projects/Github/ATSPM/FileByFileASC3Decoder/bin/Debug/FileByFileASC3Decoder.exe.config, line 6 (Password Management: Password in Configuration File)</b>		<b>High</b>
<b>Issue Details</b>		
<b>Kingdom:</b> Environment <b>Scan Engine:</b> SCA (Configuration)		
<b>Audit Details</b>		
Analysis		Not an Issue
<b>Audit Comments</b>		
<b>dlowe@utah.gov:</b> Wed Aug 01 2018 09:03:01 GMT-0600 (MDT) These will be encrypted on the production machines		
<b>Sink Details</b>		
<b>File:</b> Projects/Github/ATSPM/FileByFileASC3Decoder/bin/Debug/FileByFileASC3Decoder.exe.config:6 <b>Taint Flags:</b>		
<pre> 3 &lt;configSections&gt; 4 &lt;/configSections&gt; 5 &lt;connectionStrings&gt; 6 &lt;add name="SPM" connectionString="data source=SPMServer;initial catalog=MOE;Persist Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework" providerName="System.Data.SqlClient" /&gt; 7 &lt;add name="ADConnectionString" connectionString="LDAP://itwcap1" /&gt; 8 &lt;/connectionStrings&gt; 9 &lt;startup&gt; </pre>		
<b>Package: Projects.Github.ATSPM.GenerateAddDataScript</b>		
<b>Projects/Github/ATSPM/GenerateAddDataScript/app.config, line 17 (Password Management: Password in Configuration File)</b>		<b>High</b>
<b>Issue Details</b>		
<b>Kingdom:</b> Environment <b>Scan Engine:</b> SCA (Configuration)		
<b>Audit Details</b>		
Analysis		Not an Issue
<b>Audit Comments</b>		
<b>yxing:</b> Thu Apr 11 2019 11:52:13 GMT-0600 (MDT) These will be encrypted on the production machines		
<b>Sink Details</b>		





**Password Management: Password in Configuration File****High****Package: Projects.Github.ATSPM.GenerateAddDataScript****Projects/Github/ATSPM/GenerateAddDataScript/app.config, line 17 (Password Management: Password in Configuration File)****High****File:** Projects/Github/ATSPM/GenerateAddDataScript/app.config:17**Taint Flags:**

```
14 <add key="ClientSettingsProvider.ServiceUri" value="" />
15 </appSettings>
16 <connectionStrings>
17 <add name="SPM" connectionString="data source=AtspmServer;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
18 </connectionStrings>
19 <entityFramework>
20 <defaultConnectionFactory type="System.Data.Entity.Infrastructure.SqlConnectionFactory,
EntityFramework" />
```

**Package: Projects.Github.ATSPM.GenerateAddDataScript.bin.Debug****Projects/Github/ATSPM/GenerateAddDataScript/bin/Debug/GenerateAddDataScript.exe.config, line 17 (Password Management: Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**yxing:** Thu Apr 11 2019 11:52:43 GMT-0600 (MDT)  
These will be encrypted on the production machines

**Sink Details****File:** Projects/Github/ATSPM/GenerateAddDataScript/bin/Debug/GenerateAddDataScript.exe.config:17**Taint Flags:**

```
14 <add key="ClientSettingsProvider.ServiceUri" value="" />
15 </appSettings>
16 <connectionStrings>
17 <add name="SPM" connectionString="data source=AtspmServer;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
18 </connectionStrings>
19 <entityFramework>
20 <defaultConnectionFactory type="System.Data.Entity.Infrastructure.SqlConnectionFactory,
EntityFramework" />
```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.GenerateControllerEventLogObjectText</b>	
<b>Projects/Github/ATSPM/GenerateControllerEventLogObjectText/App.config, line 8 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/GenerateControllerEventLogObjectText/App.config:8  
**Taint Flags:**

```

5 </configSections>
6
7 <connectionStrings>
8 <add name="SPM" connectionString="data source=AtspmServer;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
9 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
10 </connectionStrings>
11 <startup>

```

<b>Package: Projects.Github.ATSPM.GenerateControllerEventLogObjectText.bin.Debug</b>	
<b>Projects/Github/ATSPM/GenerateControllerEventLogObjectText/bin/Debug/GenerateControllerEventLogObjectText.exe.config, line 8 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/GenerateControllerEventLogObjectText/bin/Debug/GenerateControllerEventLogObjectText.exe.config:8  
**Taint Flags:**

```

5 </configSections>
6
7 <connectionStrings>

```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.GenerateControllerEventLogObjectText.bin.Debug</b>	
<b>Projects/Github/ATSPM/GenerateControllerEventLogObjectText/bin/Debug/GenerateControllerEventLogObjectText.exe.config, line 8 (Password Management: Password in Configuration File)</b>	<b>High</b>

```

8 <add name="SPM" connectionString="data source=AtspmServer;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
9 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
10 </connectionStrings>
11 <startup>

```

<b>Package: Projects.Github.ATSPM.GetMaxTimeRecords</b>	
<b>Projects/Github/ATSPM/GetMaxTimeRecords/App.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/GetMaxTimeRecords/App.config:12  
**Taint Flags:**

```

9 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 -->
10 </configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="Data Source=ATSPMServer;Initial Catalog=MOE;Persist
Security Info=True;User ID=SPM;Password=ATSPMPassword" providerName="System.Data.SqlClient" />
13 <add name="GetMaxTimeRecords.Properties.Settings.SPM" connectionString="Data
Source=ATSPMServer;Initial Catalog=MOE;Persist Security Info=True;User
ID=SPM;Password=ATSPMPassword" providerName="System.Data.SqlClient" />
14 </connectionStrings>
15 <startup>

```

<b>Projects/Github/ATSPM/GetMaxTimeRecords/App.config, line 13 (Password Management: Password in Configuration File)</b>	<b>High</b>
--	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.GetMaxTimeRecords</b>	
<b>Projects/Github/ATSPM/GetMaxTimeRecords/App.config, line 13 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/GetMaxTimeRecords/App.config:13  
**Taint Flags:**

```

10 </configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="Data Source=ATSPMServer;Initial Catalog=MOE;Persist
Security Info=True;User ID=SPM;Password=ATSPMPassword" providerName="System.Data.SqlClient" />
13 <add name="GetMaxTimeRecords.Properties.Settings.SPM" connectionString="Data
Source=ATSPMServer;Initial Catalog=MOE;Persist Security Info=True;User
ID=SPM;Password=ATSPMPassword" providerName="System.Data.SqlClient" />
14 </connectionStrings>
15 <startup>
16 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />

```

<b>Package: Projects.Github.ATSPM.GetMaxTimeRecords.bin.Debug</b>	
<b>Projects/Github/ATSPM/GetMaxTimeRecords/bin/Debug/GetMaxTimeRecords.exe.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/GetMaxTimeRecords/bin/Debug/GetMaxTimeRecords.exe.config:12  
**Taint Flags:**

```

9 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 -->
10 </configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="Data Source=ATSPMServer;Initial Catalog=MOE;Persist
Security Info=True;User ID=SPM;Password=ATSPMPassword" providerName="System.Data.SqlClient" />
13 <add name="GetMaxTimeRecords.Properties.Settings.SPM" connectionString="Data
Source=ATSPMServer;Initial Catalog=MOE;Persist Security Info=True;User
ID=SPM;Password=ATSPMPassword" providerName="System.Data.SqlClient" />
14 </connectionStrings>

```



<b>Password Management: Password in Configuration File</b>		<b>High</b>
<b>Package: Projects.Github.ATSPM.GetMaxTimeRecords.bin.Debug</b>		
<b>Projects/Github/ATSPM/GetMaxTimeRecords/bin/Debug/GetMaxTimeRecords.exe.config, line 12 (Password Management: Password in Configuration File)</b>		<b>High</b>
15 <startup>		
<b>Projects/Github/ATSPM/GetMaxTimeRecords/bin/Debug/GetMaxTimeRecords.exe.config, line 13 (Password Management: Password in Configuration File)</b>		<b>High</b>
<b>Issue Details</b>		
Kingdom: Environment Scan Engine: SCA (Configuration)		
<b>Audit Details</b>		
Analysis		Not an Issue
<b>Audit Comments</b>		
dlowe@utah.gov: Wed Aug 01 2018 09:03:01 GMT-0600 (MDT) These will be encrypted on the production machines		
<b>Sink Details</b>		
File: Projects/Github/ATSPM/GetMaxTimeRecords/bin/Debug/GetMaxTimeRecords.exe.config:13 Taint Flags:		
10 </configSections> 11 <connectionStrings> 12 <add name="SPM" connectionString="Data Source=ATSPMServer;Initial Catalog=MOE;Persist Security Info=True;User ID=SPM;Password=ATSPMPassword" providerName="System.Data.SqlClient" /> 13 <add name="GetMaxTimeRecords.Properties.Settings.SPM" connectionString="Data Source=ATSPMServer;Initial Catalog=MOE;Persist Security Info=True;User ID=SPM;Password=ATSPMPassword" providerName="System.Data.SqlClient" /> 14 </connectionStrings> 15 <startup> 16 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />		
<b>Package: Projects.Github.ATSPM.ImportChecker</b>		
<b>Projects/Github/ATSPM/ImportChecker/App.config, line 8 (Password Management: Password in Configuration File)</b>		<b>High</b>
<b>Issue Details</b>		
Kingdom: Environment Scan Engine: SCA (Configuration)		
<b>Audit Details</b>		
Analysis		Not an Issue
<b>Audit Comments</b>		
dlowe@utah.gov: Wed Aug 01 2018 09:03:01 GMT-0600 (MDT) These will be encrypted on the production machines		
<b>Sink Details</b>		



**Password Management: Password in Configuration File****High****Package: Projects.Github.ATSPM.ImportChecker****Projects/Github/ATSPM/ImportChecker/App.config, line 8 (Password Management: Password in Configuration File)****High****File:** Projects/Github/ATSPM/ImportChecker/App.config:8**Taint Flags:**

```
5 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
6 </configSections>
7 <connectionStrings>
8 <add name="SPM" connectionString="Data Source=AtspmServer;Initial Catalog=MOE;Persist
Security Info=True;User ID=SPM;Password=SpmPassword" providerName="System.Data.SqlClient" />
9 </connectionStrings>
10 <startup>
11 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />
```

**Package: Projects.Github.ATSPM.ImportChecker.bin.Debug****Projects/Github/ATSPM/ImportChecker/bin/Debug/ImportChecker.exe.config, line 8 (Password Management: Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details**

Analysis Not an Issue

**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)

These will be encrypted on the production machines

**Sink Details****File:** Projects/Github/ATSPM/ImportChecker/bin/Debug/ImportChecker.exe.config:8**Taint Flags:**

```
5 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
6 </configSections>
7 <connectionStrings>
8 <add name="SPM" connectionString="Data Source=AtspmServer;Initial Catalog=MOE;Persist
Security Info=True;User ID=SPM;Password=SpmPassword" providerName="System.Data.SqlClient" />
9 </connectionStrings>
10 <startup>
11 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />
```



**Password Management: Password in Configuration File****High****Package: Projects.Github.ATSPM.MOE.Common.bin.Debug****Projects/Github/ATSPM/MOE.Common/bin/Debug/  
Microsoft.Extensions.Identity.Core.xml, line 448 (Password Management:  
Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details**

Analysis Not an Issue

**Sink Details****File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:448**Taint Flags:**

```
445 <summary>
446 Gets or sets the <see cref="T:Microsoft.AspNetCore.Identity.PasswordOptions"/> for the
identity system.
447 </summary>
448 <value>
449 The <see cref="T:Microsoft.AspNetCore.Identity.PasswordOptions"/> for the identity system.
450 </value>
451 </member>
```

**Projects/Github/ATSPM/MOE.Common/bin/Debug/  
Microsoft.Extensions.Identity.Core.xml, line 1584 (Password Management:  
Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details**

Analysis Not an Issue

**Sink Details****File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:1584**Taint Flags:**

```
1581 <summary>
1582 Gets or sets the compatibility mode used when hashing passwords. Defaults to 'ASP.NET
Identity version 3'.
1583 </summary>
1584 <value>
1585 The compatibility mode used when hashing passwords.
1586 </value>
1587 </member>
```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.MOE.Common.bin.Debug</b>	
<b>Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml, line 1592 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:1592  
**Taint Flags:**

```

1589 <summary>
1590 Gets or sets the number of iterations used when hashing passwords using PBKDF2. Default
is 10,000.
1591 </summary>
1592 <value>
1593 The number of iterations used when hashing passwords using PBKDF2.
1594 </value>
1595 <remarks>
```

<b>Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml, line 1619 (Password Management: Password in Configuration File)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:1619  
**Taint Flags:**

```

1616 <summary>
1617 Gets or sets a flag indicating if passwords must contain a non-alphanumeric character.
Defaults to true.
1618 </summary>
1619 <value>True if passwords must contain a non-alphanumeric character, otherwise false.</
value>
1620 </member>
1621 <member name="P:Microsoft.AspNetCore.Identity.PasswordOptions.RequireLowercase">
1622 <summary>
```





<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.MOE.Common.bin.Debug</b>	
<b>Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml, line 1625 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:1625  
**Taint Flags:**

```

1622 <summary>
1623 Gets or sets a flag indicating if passwords must contain a lower case ASCII character.
1624 Defaults to true.
1625 </summary>
1626 <value>True if passwords must contain a lower case ASCII character.</value>
1627 </member>
1628 <member name="P:Microsoft.AspNetCore.Identity.PasswordOptions.RequireUppercase">
1629 <summary>

```

<b>Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml, line 1631 (Password Management: Password in Configuration File)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:1631  
**Taint Flags:**

```

1628 <summary>
1629 Gets or sets a flag indicating if passwords must contain a upper case ASCII character.
1630 Defaults to true.
1631 </summary>
1632 <value>True if passwords must contain a upper case ASCII character.</value>
1633 </member>
1634 <member name="P:Microsoft.AspNetCore.Identity.PasswordOptions.RequireDigit">
1635 <summary>

```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.MOE.Common.bin.Debug</b>	
<b>Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml, line 1637 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:1637  
**Taint Flags:**

```

1634 <summary>
1635 Gets or sets a flag indicating if passwords must contain a digit. Defaults to true.
1636 </summary>
1637 <value>True if passwords must contain a digit.</value>
1638 </member>
1639 <member name="T:Microsoft.AspNetCore.Identity.PasswordValidator`1">
1640 <summary>
```

<b>Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml, line 1655 (Password Management: Password in Configuration File)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:1655  
**Taint Flags:**

```

1652 <summary>
1653 Gets the <see cref="T:Microsoft.AspNetCore.Identity.IdentityErrorDescriber"/> used to
supply error text.
1654 </summary>
1655 <value>The <see cref="T:Microsoft.AspNetCore.Identity.IdentityErrorDescriber"/> used to
supply error text.</value>
1656 </member>
1657 <member
name="M:Microsoft.AspNetCore.Identity.PasswordValidator`1.ValidateAsync(Microsoft.AspNetCore.Identity
1658 <summary>
```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.MOE.Common.bin.Debug</b>	
<b>Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml, line 2176 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:2176  
**Taint Flags:**

```

2173 <summary>
2174 Gets or sets the <see cref="T:Microsoft.AspNetCore.Identity.IUserTwoFactorTokenProvider`1"/> used to generate tokens
used in password reset emails.
2175 </summary>
2176 <value>
2177 The <see cref="T:Microsoft.AspNetCore.Identity.IUserTwoFactorTokenProvider`1"/> used to
generate tokens used in password reset emails.
2178 </value>
2179 </member>

```

<b>Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml, line 2544 (Password Management: Password in Configuration File)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Sink Details

**File:** Projects/Github/ATSPM/MOE.Common/bin/Debug/Microsoft.Extensions.Identity.Core.xml:2544  
**Taint Flags:**

```

2541 <summary>
2542 Gets a flag indicating whether the backing user store supports user passwords.
2543 </summary>
2544 <value>
2545 true if the backing user store supports user passwords, otherwise false.
2546 </value>
2547 </member>

```



**Password Management: Password in Configuration File****High****Package:** Projects.Github.ATSPM.MOEWcfServiceLibrary**Projects/Github/ATSPM/MOEWcfServiceLibrary/App.config, line 12 (Password Management: Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details****Analysis** Not an Issue**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines**Sink Details****File:** Projects/Github/ATSPM/MOEWcfServiceLibrary/App.config:12**Taint Flags:**

```
9 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 -->
10 </configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=srwtcns54;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13
14 </connectionStrings>
15 <appSettings>
```

**Package:** Projects.Github.ATSPM.MOEWcfServiceLibrary.bin.Debug**Projects/Github/ATSPM/MOEWcfServiceLibrary/bin/Debug/
MOEWcfServiceLibrary.dll.config, line 12 (Password Management: Password in
Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details****Analysis** Not an Issue**Audit Comments****dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines**Sink Details****File:** Projects/Github/ATSPM/MOEWcfServiceLibrary/bin/Debug/MOEWcfServiceLibrary.dll.config:12**Taint Flags:**

```
9 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 -->
10 </configSections>
11 <connectionStrings>
```



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.MOEWcfServiceLibrary.bin.Debug</b>	
<b>Projects/Github/ATSPM/MOEWcfServiceLibrary/bin/Debug/MOEWcfServiceLibrary.dll.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>

```

12 <add name="SPM" connectionString="data source=srwtcns54;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13
14 </connectionStrings>
15 <appSettings>

```

<b>Package: Projects.Github.ATSPM.NEWDecodeandImportASC3Logs</b>	
<b>Projects/Github/ATSPM/NEWDecodeandImportASC3Logs/App.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/NEWDecodeandImportASC3Logs/App.config:11  
**Taint Flags:**

```

8 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
9 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 --></configSections>
10 <connectionStrings>
11 <add name="SPM" connectionString="data source=SPMServer;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
12 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
13 </connectionStrings>
14 <startup>

```

<b>Package: Projects.Github.ATSPM.NEWDecodeandImportASC3Logs.bin.Debug</b>	
<b>Projects/Github/ATSPM/NEWDecodeandImportASC3Logs/bin/Debug/NEWDecodeandImportASC3Logs.exe.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)



Password Management: Password in Configuration File		High
Package: Projects.Github.ATSPM.NEWDcodeandImportASC3Logs.bin.Debug		
Projects/Github/ATSPM/NEWDcodeandImportASC3Logs/bin/Debug/NEWDcodeandImportASC3Logs.exe.config, line 11 (Password Management: Password in Configuration File)		High
Audit Details		
Analysis	Not an Issue	
Audit Comments		
<div>dlowe@utah.gov: Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)</div> <div>These will be encrypted on the production machines</div>		
Sink Details		
<div>File: Projects/Github/ATSPM/NEWDcodeandImportASC3Logs/bin/Debug/NEWDcodeandImportASC3Logs.exe.config:11</div> <div>Taint Flags:</div> <div><div>8 &lt;section name="entityFramework"</div><div>type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,</div><div>Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" /&gt;</div><div>9 &lt;!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/</div><div>fwlink/?LinkID=237468 --&gt;&lt;/configSections&gt;</div><div>10 &lt;connectionStrings&gt;</div><div>11 &lt;add name="SPM" connectionString="data source=SPMServer;initial catalog=MOE;Persist</div><div>Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"</div><div>providerName="System.Data.SqlClient" /&gt;</div><div>12 &lt;add name="ADConnectionString" connectionString="LDAP://itwcap1" /&gt;</div><div>13 &lt;/connectionStrings&gt;</div><div>14 &lt;startup&gt;</div></div>		
Package: Projects.Github.ATSPM.SPM		
Projects/Github/ATSPM/SPM/Web.config, line 12 (Password Management: Password in Configuration File)		High
Issue Details		
<div>Kingdom: Environment</div> <div>Scan Engine: SCA (Configuration)</div>		
Audit Details		
Analysis	Not an Issue	
Audit Comments		
<div>dlowe@utah.gov: Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)</div> <div>These will be encrypted on the production machines</div>		
Sink Details		
<div>File: Projects/Github/ATSPM/SPM/Web.config:12</div> <div>Taint Flags:</div> <div><div>9 &lt;section name="entityFramework"</div><div>type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,</div><div>Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" /&gt;</div><div>10 &lt;!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/</div><div>fwlink/?LinkID=237468 --&gt;&lt;/configSections&gt;</div></div>		

**Password Management: Password in Configuration File****High****Package: Projects.Github.ATSPM.SPM****Projects/Github/ATSPM/SPM/Web.config, line 12 (Password Management: Password in Configuration File)****High**

```
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=srwtcns54;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
14 </connectionStrings>
15 <appSettings>
```

**Package: Projects.Github.ATSPM.SPM.bin****Projects/Github/ATSPM/SPM/bin/SPM.dll.config, line 12 (Password Management: Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details**

Analysis Not an Issue

**Audit Comments**

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

**Sink Details****File:** Projects/Github/ATSPM/SPM/bin/SPM.dll.config:12**Taint Flags:**

```
9 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
10 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 --></configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=srwtcns54;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13 <add name="ADConnectionString" connectionString="LDAP://itwcap1" />
14 </connectionStrings>
15 <appSettings>
```

**Projects/Github/ATSPM/SPM/bin/MOEWcfServiceLibrary.dll.config, line 12 (Password Management: Password in Configuration File)****High****Issue Details****Kingdom:** Environment**Scan Engine:** SCA (Configuration)**Audit Details**

Analysis Not an Issue



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.SPM.bin</b>	
<b>Projects/Github/ATSPM/SPM/bin/MOEWcfServiceLibrary.dll.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Audit Comments

**dlowe:** Fri Jan 04 2019 13:21:57 GMT-0700 (MST)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/SPM/bin/MOEWcfServiceLibrary.dll.config:12

**Taint Flags:**

```

9 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 -->
10 </configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=srwtcns54;initial catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13
14 </connectionStrings>
15 <appSettings>

```

<b>Package: Projects.Github.ATSPM.SPMWatchDogNew</b>	
<b>Projects/Github/ATSPM/SPMWatchDogNew/App.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/SPMWatchDogNew/App.config:11

**Taint Flags:**

```

8 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
9 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 --></configSections>
10 <connectionStrings>
11 <add name="SPM" connectionString="data source=srwtcns54;Initial Catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm" providerName="System.Data.SqlClient" />
12 </connectionStrings>
13 <startup>
14 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />

```





<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.SPMWatchDogNew</b>	
<b>Projects/Github/ATSPM/SPMWatchDogNew/App.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

<b>Package: Projects.Github.ATSPM.SPMWatchDogNew.bin.Debug</b>	
<b>Projects/Github/ATSPM/SPMWatchDogNew/bin/Debug/SPMWatchDogNew.exe.config, line 11 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**yxing:** Thu Apr 11 2019 11:52:52 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/SPMWatchDogNew/bin/Debug/SPMWatchDogNew.exe.config:11  
**Taint Flags:**

```

8 <section name="entityFramework"
type="System.Data.Entity.Internal.ConfigFile.EntityFrameworkSection, EntityFramework,
Version=6.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" requirePermission="false" />
9 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 --></configSections>
10 <connectionStrings>
11 <add name="SPM" connectionString="data source=srwtcns54;Initial Catalog=MOE;Persist
Security Info=True;User ID=spm;Password=spm" providerName="System.Data.SqlClient" />
12 </connectionStrings>
13 <startup>
14 <supportedRuntime version="v4.0" sku=".NETFramework,Version=v4.7.2" />

```

<b>Package: Projects.Github.ATSPM.WavetronicsSpeedListener</b>	
<b>Projects/Github/ATSPM/WavetronicsSpeedListener/App.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment  
**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details



<b>Password Management: Password in Configuration File</b>	<b>High</b>
<b>Package: Projects.Github.ATSPM.WavetronicsSpeedListener</b>	
<b>Projects/Github/ATSPM/WavetronicsSpeedListener/App.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>

**File:** Projects/Github/ATSPM/WavetronicsSpeedListener/App.config:12

**Taint Flags:**

```

9
10 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 --></configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=AtspmServer;initial catalog=MOE;Persist
Security Info=True;User
ID=SPM;Password=SpmPassword;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13 </connectionStrings>
14
15 <startup>

```

<b>Package: Projects.Github.ATSPM.WavetronicsSpeedListener.bin.Debug</b>	
<b>Projects/Github/ATSPM/WavetronicsSpeedListener/bin/Debug/WavetronicsSpeedListener.exe.config, line 12 (Password Management: Password in Configuration File)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Environment

**Scan Engine:** SCA (Configuration)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:03:01 GMT-0600 (MDT)  
These will be encrypted on the production machines

#### Sink Details

**File:** Projects/Github/ATSPM/WavetronicsSpeedListener/bin/Debug/WavetronicsSpeedListener.exe.config:12  
**Taint Flags:**

```

9
10 <!-- For more information on Entity Framework configuration, visit http://go.microsoft.com/
fwlink/?LinkID=237468 --></configSections>
11 <connectionStrings>
12 <add name="SPM" connectionString="data source=AtspmServer;initial catalog=MOE;Persist
Security Info=True;User
ID=SPM;Password=SpmPassword;MultipleActiveResultSets=True;App=EntityFramework"
providerName="System.Data.SqlClient" />
13 </connectionStrings>
14
15 <startup>

```





## Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
Path Manipulation	16	0	0	16
<b>Total</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>16</b>

### Path Manipulation

Critical

Package: AlexPilotti.FTPS.Client

Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 797 (Path Manipulation)

Critical

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Suspicious

#### Audit Comments

**dlowe:** Wed Aug 01 2018 13:12:03 GMT-0600 (MDT)  
I am unsure if this is an issue or not. I need to research this to see what its potential threat is. There is not ui for someone to modify this. It runs behind a firewall.

#### Source Details

**Source:** System.IO.Stream.Read()  
**From:** AlexPilotti.FTPS.Client.FTPSCClient.GetDataString  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:1547

```
1544 int n = 0;
1545 do
1546 {
1547 n = s.Read(buf, 0, buf.Length);
1548 data.Append(Encoding.UTF8.GetString(buf, 0, n));
1549 }
1550 while (n != 0);
```

#### Sink Details

**Sink:** System.IO.Directory.CreateDirectory()  
**Enclosing Method:** GetFiles()  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:797  
**Taint Flags:** STREAM

```
794 else if (!Directory.Exists(currLocalDirectoryName))
795 {
796 // Create local directory if needed
797 Directory.CreateDirectory(currLocalDirectoryName);
798 CallTransferCallback(transferCallback, ETransferActions.LocalDirectoryCreated,
currLocalDirectoryName, null, 0, null);
799 }
800
```



Path Manipulation		Critical
Package: AlexPilotti.FTPS.Client		
Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 797 (Path Manipulation)		Critical
Issue Details		
Kingdom: Input Validation and Representation Scan Engine: SCA (Data Flow)		
Audit Details		
Analysis	Suspicious	
Audit Comments		
dlowe: Wed Aug 01 2018 13:12:03 GMT-0600 (MDT) I am unsure if this is an issue or not. I need to research this to see what its potential threat is. There is not ui for someone to modify this. It runs behind a firewall.		
Source Details		
Source: System.Net.Sockets.TcpClient.GetStream() From: AlexPilotti.FTPS.Client.FTPSCClient.GetDataStream File: Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:1526		
<pre>1523  if ((sslSupportCurrentMode &amp; ESSLSupportMode.DataChannelRequested) == ESSLSupportMode.DataChannelRequested) 1524  { 1525  if (dataSslStream == null) 1526  dataSslStream = CreateSSLStream(dataClient.GetStream(), false); 1527  s = dataSslStream; 1528  } 1529  else</pre>		
Sink Details		
Sink: System.IO.Directory.CreateDirectory() Enclosing Method: GetFiles() File: Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:797 Taint Flags: NETWORK, XSS		
<pre>794  else if (!Directory.Exists(currLocalDirectoryName)) 795  { 796  // Create local directory if needed 797  Directory.CreateDirectory(currLocalDirectoryName); 798  CallTransferCallback(transferCallback, ETransferActions.LocalDirectoryCreated, currLocalDirectoryName, null, 0, null); 799  } 800</pre>		
Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 797 (Path Manipulation)		Critical
Issue Details		
Kingdom: Input Validation and Representation Scan Engine: SCA (Data Flow)		



Path Manipulation		Critical
Package: AlexPilotti.FTPS.Client		
Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 797 (Path Manipulation)		Critical
Audit Details		
Analysis	Suspicious	
Audit Comments		
<p><b>dlowe:</b> Wed Aug 01 2018 13:12:03 GMT-0600 (MDT) I am unsure if this is an issue or not. I need to research this to see what its potential threat is. There is not ui for someone to modify this. It runs behind a firewall.</p>		
Source Details		
<p><b>Source:</b> System.Net.Sockets.TcpClient.GetStream() <b>From:</b> AlexPilotti.FTPS.Client.FTPSCClient.GetDataStream <b>File:</b> Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:1530</p>		
<pre>1527  s = dataSslStream; 1528  } 1529  else 1530  s = dataClient.GetStream(); 1531 1532  return s; 1533  }</pre>		
Sink Details		
<p><b>Sink:</b> System.IO.Directory.CreateDirectory() <b>Enclosing Method:</b> GetFiles() <b>File:</b> Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:797 <b>Taint Flags:</b> NETWORK, XSS</p>		
<pre>794  else if (!Directory.Exists(currLocalDirectoryName)) 795  { 796  // Create local directory if needed 797  Directory.CreateDirectory(currLocalDirectoryName); 798  CallTransferCallback(transferCallback, ETransferActions.LocalDirectoryCreated, currLocalDirectoryName, null, 0, null); 799  } 800</pre>		
Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 737 (Path Manipulation)		Critical
Issue Details		
<p><b>Kingdom:</b> Input Validation and Representation <b>Scan Engine:</b> SCA (Data Flow)</p>		
Audit Details		
Analysis	Bad Practice	
Audit Comments		
<p><b>dlowe@utah.gov:</b> Tue Jul 31 2018 12:47:10 GMT-0600 (MDT)</p>		



<b>Path Manipulation</b>	<b>Critical</b>
<b>Package: AlexPilotti.FTPS.Client</b>	
<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 737 (Path Manipulation)</b>	<b>Critical</b>

#### Audit Comments

This code was downloaded through Microsoft NUGET. The program that uses ftps is a scheduled task command line tool. This runs behind a firewall and is not accessible to the outside world. Also the program does not use this specific function.

#### Source Details

**Source:** System.IO.Stream.Read()

**From:** AlexPilotti.FTPS.Client.FTPSCClient.GetDataString

**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:1547

```

1544  int n = 0;
1545  do
1546  {
1547  n = s.Read(buf, 0, buf.Length);
1548  data.Append(Encoding.UTF8.GetString(buf, 0, n));
1549  }
1550  while (n != 0);

```

#### Sink Details

**Sink:** System.IO.FileStream.FileStream()

**Enclosing Method:** GetFile()

**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:737

**Taint Flags:** STREAM

```

734
735  using (Stream s = GetFile(remoteFileName))
736  {
737  using (FileStream fs = new FileStream(localFileName, FileMode.Create, FileAccess.Write,
FileStream.None))
738  {
739  byte[] buf = new byte[1024];
740  int n = 0;

```

<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 737 (Path Manipulation)</b>	<b>Critical</b>
---	-----------------

#### Issue Details

**Kingdom:** Input Validation and Representation

**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis                      Bad Practice

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:47:57 GMT-0600 (MDT)

This code was downloaded through Microsoft NUGET. The program that uses ftps is a scheduled task command line tool. This runs behind a firewall and is not accessible to the outside world. Also the program does not use this specific function.



<b>Path Manipulation</b>	<b>Critical</b>
<b>Package: AlexPilotti.FTPS.Client</b>	
<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 737 (Path Manipulation)</b>	<b>Critical</b>

#### Source Details

**Source:** System.Net.Sockets.TcpClient.GetStream()  
**From:** AlexPilotti.FTPS.Client.FTPSCClient.GetDataStream  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:1526

```

1523 if ((sslSupportCurrentMode & ESSLSupportMode.DataChannelRequested) ==
ESSLSupportMode.DataChannelRequested)
1524 {
1525     if (dataSslStream == null)
1526         dataSslStream = CreateSSLStream(dataClient.GetStream(), false);
1527     s = dataSslStream;
1528 }
1529 else

```

#### Sink Details

**Sink:** System.IO.FileStream.FileStream()  
**Enclosing Method:** GetFile()  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:737  
**Taint Flags:** NETWORK, XSS

```

734
735 using (Stream s = GetFile(remoteFileName))
736 {
737     using (FileStream fs = new FileStream(localFileName, FileMode.Create, FileAccess.Write,
FileStream.None))
738     {
739         byte[] buf = new byte[1024];
740         int n = 0;

```

<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 737 (Path Manipulation)</b>	<b>Critical</b>
---	-----------------

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis                      Bad Practice

#### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:48:13 GMT-0600 (MDT)  
This code was downloaded through Microsoft NUGET. The program that uses ftps is a scheduled task command line tool. This runs behind a firewall and is not accessible to the outside world. Also the program does not use this specific function.

#### Source Details

**Source:** System.Net.Sockets.TcpClient.GetStream()





<b>Path Manipulation</b>	<b>Critical</b>
<b>Package: AlexPilotti.FTPS.Client</b>	
<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 737 (Path Manipulation)</b>	<b>Critical</b>

**From:** AlexPilotti.FTPS.Client.FTPSCClient.GetDataStream  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:1530

```

1527 s = dataSslStream;
1528 }
1529 else
1530 s = dataClient.GetStream();
1531
1532 return s;
1533 }

```

#### Sink Details

**Sink:** System.IO.FileStream.FileStream()  
**Enclosing Method:** GetFile()  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:737  
**Taint Flags:** NETWORK, XSS

```

734
735 using (Stream s = GetFile(remoteFileName))
736 {
737     using (FileStream fs = new FileStream(localFileName, FileMode.Create, FileAccess.Write,
738         FileShare.None))
739     {
740         byte[] buf = new byte[1024];
741         int n = 0;

```

<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 198 (Path Manipulation)</b>	<b>Critical</b>

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Source Details

**Source:** CreateMetricWithDataTable(0)  
**From:** MOEWcfServiceLibrary.MetricGenerator.CreateMetricWithDataTable  
**File:** Projects/Github/ATSPM/MOEWcfServiceLibrary/MetricGenerator.cs:64

```

61
62
63

```



<b>Path Manipulation</b>	<b>Critical</b>
<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 198 (Path Manipulation)</b>	<b>Critical</b>

```

64 public List<MOE.Common.Business.ApproachVolume.MetricInfo>
CreateMetricWithDataTable (MOE.Common.Business.WCFServiceLibrary.ApproachVolumeC
options)
65 {
66 try
67 {

```

#### Sink Details

**Sink:** System.IO.Directory.CreateDirectory()  
**Enclosing Method:** DriveAvailable()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:198  
**Taint Flags:** WEB, XSS

```

195 di.Refresh();
196 if (di.Exists)
197 return true;
198 Directory.CreateDirectory(MetricFileLocation);
199 di.Refresh();
200 if (di.Exists)
201 return true;

```

<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 194 (Path Manipulation)</b>	<b>Critical</b>
---	-----------------

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Source Details

**Source:** CreateTMCChart(0)  
**From:** MOEWcfServiceLibrary.MetricGenerator.CreateTMCChart  
**File:** Projects/Github/ATSPM/MOEWcfServiceLibrary/MetricGenerator.cs:92

```

89 }
90
91
92 public MOE.Common.Business.TMC.TMCInfo
CreateTMCChart (MOE.Common.Business.WCFServiceLibrary.TMCOptions options)
93 {
94 try
95 {

```



<b>Path Manipulation</b>	<b>Critical</b>
<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 194 (Path Manipulation)</b>	<b>Critical</b>

#### Sink Details

**Sink:** System.IO.DirectoryInfo.DirectoryInfo()

**Enclosing Method:** DriveAvailable()

**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:194

**Taint Flags:** WEB, XSS

```

191
192 public bool DriveAvailable()
193 {
194     var di = new DirectoryInfo(MetricFileLocation);
195     di.Refresh();
196     if (di.Exists)
197         return true;

```

<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 198 (Path Manipulation)</b>	<b>Critical</b>
---	-----------------

#### Issue Details

**Kingdom:** Input Validation and Representation

**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Source Details

**Source:** CreateTMCChart(0)

**From:** MOEWcfServiceLibrary.MetricGenerator.CreateTMCChart

**File:** Projects/Github/ATSPM/MOEWcfServiceLibrary/MetricGenerator.cs:92

```

89     }
90
91
92     public MOE.Common.Business.TMC.TMCInfo
CreateTMCChart(MOE.Common.Business.WCFServiceLibrary.TMCOptions options)
93     {
94         try
95         {

```

#### Sink Details

**Sink:** System.IO.Directory.CreateDirectory()

**Enclosing Method:** DriveAvailable()

**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:198

**Taint Flags:** WEB, XSS

```

195     di.Refresh();
196     if (di.Exists)

```



<b>Path Manipulation</b>	<b>Critical</b>
<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 198 (Path Manipulation)</b>	<b>Critical</b>

```

197 return true;
198 Directory.CreateDirectory(MetricFileLocation);
199 di.Refresh();
200 if (di.Exists)
201 return true;

```

<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 194 (Path Manipulation)</b>	<b>Critical</b>
---	-----------------

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Source Details

**Source:** CreateMetricWithDataTable(0)  
**From:** MOEWcfServiceLibrary.MetricGenerator.CreateMetricWithDataTable  
**File:** Projects/Github/ATSPM/MOEWcfServiceLibrary/MetricGenerator.cs:64

```

61
62
63
64 public List<MOE.Common.Business.ApproachVolume.MetricInfo>
CreateMetricWithDataTable(MOE.Common.Business.WCFServiceLibrary.ApproachVolumeC
options)
65 {
66 try
67 {

```

#### Sink Details

**Sink:** System.IO.DirectoryInfo.DirectoryInfo()  
**Enclosing Method:** DriveAvailable()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:194  
**Taint Flags:** WEB, XSS

```

191
192 public bool DriveAvailable()
193 {
194 var di = new DirectoryInfo(MetricFileLocation);
195 di.Refresh();
196 if (di.Exists)
197 return true;

```



<b>Path Manipulation</b>	<b>High</b>
<b>Package: AlexPilotti.FTPS.Client</b>	
<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 797 (Path Manipulation)</b>	<b>High</b>
<b>Issue Details</b>	
<b>Kingdom:</b> Input Validation and Representation <b>Scan Engine:</b> SCA (Data Flow)	
<b>Audit Details</b>	
Analysis	Suspicious
<b>Source Details</b>	
<b>Source:</b> System.IO.Stream.Read() <b>From:</b> AlexPilotti.FTPS.Common.FTPStream.Read <b>File:</b> Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPStream.cs:85	
<pre> 82  if (!CanRead) 83  throw new FTPException("Operation not allowed"); 84 85  return innerStream.Read(buffer, offset, count); 86  } 87 88  public override long Seek(long offset, SeekOrigin origin) </pre>	
<b>Sink Details</b>	
<b>Sink:</b> System.IO.Directory.CreateDirectory() <b>Enclosing Method:</b> GetFiles() <b>File:</b> Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:797 <b>Taint Flags:</b> STREAM	
<pre> 794  else if (!Directory.Exists(currLocalDirectoryName)) 795  { 796  // Create local directory if needed 797  Directory.CreateDirectory(currLocalDirectoryName); 798  CallTransferCallback(transferCallback, ETransferActions.LocalDirectoryCreated, currLocalDirectoryName, null, 0, null); 799  } 800 </pre>	
<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 737 (Path Manipulation)</b>	<b>High</b>
<b>Issue Details</b>	
<b>Kingdom:</b> Input Validation and Representation <b>Scan Engine:</b> SCA (Data Flow)	
<b>Audit Details</b>	
Analysis	Not an Issue
<b>Source Details</b>	



<b>Path Manipulation</b>	<b>High</b>
<b>Package: AlexPilotti.FTPS.Client</b>	
<b>Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 737 (Path Manipulation)</b>	<b>High</b>

**Source:** System.IO.Stream.Read()  
**From:** AlexPilotti.FTPS.Common.FTPStream.Read  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPStream.cs:85

```

82  if (!CanRead)
83  throw new FTPException("Operation not allowed");
84
85  return innerStream.Read(buffer, offset, count);
86  }
87
88  public override long Seek(long offset, SeekOrigin origin)
  
```

#### Sink Details

**Sink:** System.IO.FileStream.FileStream()  
**Enclosing Method:** GetFile()  
**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:737  
**Taint Flags:** STREAM

```

734
735  using (Stream s = GetFile(remoteFileName))
736  {
737  using (FileStream fs = new FileStream(localFileName, FileMode.Create, FileAccess.Write,
738  FileShare.None))
739  {
740  byte[] buf = new byte[1024];
741  int n = 0;
  
```

<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 194 (Path Manipulation)</b>	<b>High</b>

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:07:49 GMT-0600 (MDT)  
 Metric File Location comes from the database

#### Source Details

**Source:** CreateMetric(0)  
**From:** MOEWcfServiceLibrary.MetricGenerator.CreateMetric  
**File:** Projects/Github/ATSPM/MOEWcfServiceLibrary/MetricGenerator.cs:9



## Path Manipulation

High

Package: MOE.Common.Business.WCFServiceLibrary

Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/  
MetricOptions.cs, line 194 (Path Manipulation)

High

```
6 // NOTE: You can use the "Rename" command on the "Refactor" menu to change
the class name "ChartGenerator" in both code and config file together.
7 public class MetricGenerator : IMetricGenerator
8 {
9     public List<String>
CreateMetric(MOE.Common.Business.WCFServiceLibrary.MetricOptions options)
10 {
11     List<string> result = new List<string>();
12     try
```

### Sink Details

**Sink:** System.IO.DirectoryInfo.DirectoryInfo()

**Enclosing Method:** DriveAvailable()

**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:194

**Taint Flags:** WEB, XSS

```
191
192 public bool DriveAvailable()
193 {
194     var di = new DirectoryInfo(MetricFileLocation);
195     di.Refresh();
196     if (di.Exists)
197         return true;
```

Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/  
MetricOptions.cs, line 198 (Path Manipulation)

High

### Issue Details

**Kingdom:** Input Validation and Representation

**Scan Engine:** SCA (Data Flow)

### Audit Details

Analysis

Not an Issue

### Source Details

**Source:** GetChartAndXmlFileLocations(0)

**From:** MOEWcfServiceLibrary.MetricGenerator.GetChartAndXmlFileLocations

**File:** Projects/Github/ATSPM/MOE.WcfServiceLibrary/MetricGenerator.cs:36

```
33     return result;
34 }
35
36 public List<Tuple<string, string>>
GetChartAndXmlFileLocations(MOE.Common.Business.WCFServiceLibrary.MetricOptions
options)
```



<b>Path Manipulation</b>	<b>High</b>
<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 198 (Path Manipulation)</b>	<b>High</b>

```

37  {
38  try
39  {

```

#### Sink Details

**Sink:** System.IO.Directory.CreateDirectory()  
**Enclosing Method:** DriveAvailable()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:198  
**Taint Flags:** WEB, XSS

```

195  di.Refresh();
196  if (di.Exists)
197  return true;
198  Directory.CreateDirectory(MetricFileLocation);
199  di.Refresh();
200  if (di.Exists)
201  return true;

```

<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 194 (Path Manipulation)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Audit Comments

**dlowe@utah.gov:** Wed Aug 01 2018 09:08:18 GMT-0600 (MDT)  
MetricFileLocation comes from the database.

#### Source Details

**Source:** GetChartAndXmlFileLocations(0)  
**From:** MOEWcfServiceLibrary.MetricGenerator.GetChartAndXmlFileLocations  
**File:** Projects/Github/ATSPM/MOEWcfServiceLibrary/MetricGenerator.cs:36

```

33  return result;
34  }
35
36  public List<Tuple<string, string>>
GetChartAndXmlFileLocations(MOE.Common.Business.WCFServiceLibrary.MetricOptions
options)
37  {
38  try
39  {

```





<b>Path Manipulation</b>	<b>High</b>
<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 194 (Path Manipulation)</b>	<b>High</b>

#### Sink Details

**Sink:** System.IO.DirectoryInfo.DirectoryInfo()  
**Enclosing Method:** DriveAvailable()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:194  
**Taint Flags:** WEB, XSS

```

191
192 public bool DriveAvailable()
193 {
194     var di = new DirectoryInfo(MetricFileLocation);
195     di.Refresh();
196     if (di.Exists)
197         return true;
  
```

<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 198 (Path Manipulation)</b>	<b>High</b>
---	-------------

#### Issue Details

**Kingdom:** Input Validation and Representation  
**Scan Engine:** SCA (Data Flow)

#### Audit Details

Analysis Not an Issue

#### Source Details

**Source:** CreateMetric()  
**From:** MOEWcfServiceLibrary.MetricGenerator.CreateMetric  
**File:** Projects/Github/ATSPM/MOE.WcfServiceLibrary/MetricGenerator.cs:9

```

6 // NOTE: You can use the "Rename" command on the "Refactor" menu to change
the class name "ChartGenerator" in both code and config file together.
7 public class MetricGenerator : IMetricGenerator
8 {
9     public List<String>
CreateMetric(MOE.Common.Business.WCFServiceLibrary.MetricOptions options)
10 {
11     List<string> result = new List<string>();
12     try
  
```

#### Sink Details

**Sink:** System.IO.Directory.CreateDirectory()  
**Enclosing Method:** DriveAvailable()  
**File:** Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs:198  
**Taint Flags:** WEB, XSS



<b>Path Manipulation</b>	<b>High</b>
<b>Package: MOE.Common.Business.WCFServiceLibrary</b>	
<b>Projects/Github/ATSPM/MOE.Common/Business/WCFServiceLibrary/MetricOptions.cs, line 198 (Path Manipulation)</b>	<b>High</b>

```

195 di.Refresh();
196 if (di.Exists)
197     return true;
198 Directory.CreateDirectory(MetricFileLocation);
199 di.Refresh();
200 if (di.Exists)
201     return true;

```



## Privacy Violation (1 issue)

### Abstract

Mishandling private information, such as customer passwords or social security numbers, can compromise user privacy and is often illegal.

### Explanation

Privacy violations occur when: 1. Private user information enters the program. 2. The data is written to an external location, such as the console, file system or network. **Example:** The following code contains a logging statement that tracks the contents of records added to a database by storing them in a log file. Among other values that are stored, the `getPassword()` function returns the user-supplied plaintext password associated with the account.

```
pass = GetPassword();
```

```
...
```

```
dbmsLog.WriteLine(id+": "+pass+": "+type+": "+timestamp);
```

The code in the example above logs a plaintext password to the filesystem. Although many developers trust the filesystem as a safe storage location for data, it should not be trusted implicitly, particularly when privacy is a concern. Private data can enter a program in a variety of ways: - Directly from the user in the form of a password or personal information - Accessed from a database or other data store by the application - Indirectly from a partner or other third party Sometimes data that is not labeled as private can have a privacy implication in a different context. For example, student identification numbers are usually not considered private because there is no explicit and publicly-available mapping to an individual student's personal information. However, if a school generates identification numbers based on student social security numbers, then the identification numbers should be considered private. Security and privacy concerns often seem to compete with each other. From a security perspective, you should record all important operations so that any anomalous activity can later be identified. However, when private data is involved, this practice can create risk. Although there are many ways in which private data can be handled unsafely, a common risk stems from misplaced trust. Programmers often trust the operating environment in which a program runs, and therefore believe that it is acceptable to store private information on the file system, in the registry, or in other locally-controlled resources. However, even if access to certain resources is restricted, this does not guarantee that the individuals who do have access can be trusted. For example, in 2004, an unscrupulous employee at AOL sold approximately 92 million private customer e-mail addresses to a spammer marketing an offshore gambling web site [1]. In response to such high-profile exploits, the collection and management of private data is becoming increasingly regulated. Depending on its location, the type of business it conducts, and the nature of any private data it handles, an organization may be required to comply with one or more of the following federal and state regulations: - Safe Harbor Privacy Framework [3] - Gramm-Leach Bliley Act (GLBA) [4] - Health Insurance Portability and Accountability Act (HIPAA) [5] - California SB-1386 [6] Despite these regulations, privacy violations continue to occur with alarming frequency.

### Recommendation

When security and privacy demands clash, privacy should usually be given the higher priority. To accomplish this and still maintain required security information, cleanse any private information before it exits the program. To enforce good privacy management, develop and strictly adhere to internal privacy guidelines. The guidelines should specifically describe how an application should handle private data. If your organization is regulated by federal or state law, ensure that your privacy guidelines are sufficiently strenuous to meet the legal requirements. Even if your organization is not regulated, you must protect private information or risk losing customer confidence. The best policy with respect to private data is to minimize its exposure. Applications, processes, and employees should not be granted access to any private data unless the access is required for the tasks that they are to perform. Just as the principle of least privilege dictates that no operation should be performed with more than the necessary privileges, access to private data should be restricted to the smallest possible group.



## Issue Summary

### Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
Privacy Violation	1	0	0	1
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>

#### Privacy Violation

Critical

Package: AlexPilotti.FTPS.Client

Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 1784 (Privacy Violation)

Critical

#### Issue Details

Kingdom: Security Features

Scan Engine: SCA (Data Flow)

#### Audit Details

Analysis Bad Practice

#### Audit Comments

dlowe@utah.gov: Tue Jul 31 2018 12:51:05 GMT-0600 (MDT)

This code was downloaded through Microsoft NUGET. The program that uses ftps is a scheduled task command line tool. This runs behind a firewall and is not accessible to the outside world. Also the program does not use this specific function.

#### Source Details

Source: Read password

From: AlexPilotti.FTPS.Client.FTPSCClient.PassCmd

File: Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:2021

```
2018  /// <returns>Returns the server \"welcome message\" in case of
      successful login.</returns>
2019  private string PassCmd(string password)
2020  {
2021  return HandleCmd(\"PASS \" + password).Message;
2022  }
2023
2024  private void PortCmd()
```



Privacy Violation	Critical
Package: AlexPilotti.FTPS.Client	
Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs, line 1784 (Privacy Violation)	Critical
Sink Details	

**Sink:** System.IO.TextWriter.WriteLine()

**Enclosing Method:** HandleCmd()

**File:** Projects/Github/ATSPM/FTPSCClient/FTPSCClient/FTPSCClient.cs:1784

**Taint Flags:** PRIVATE

```

1781 //if (waitingCompletionReply)
1782 // throw new FTPException("Cannot issue a new command while waiting for a previous one
to complete");
1783
1784 ctrlSw.WriteLine(command);
1785 ctrlSw.Flush();
1786
1787 if (LogCommand != null)

```

# SQL Injection (1 issue)

## Abstract

Constructing a dynamic SQL statement with input coming from an untrusted source might allow an attacker to modify the statement's meaning or to execute arbitrary SQL commands.

## Explanation

SQL injection errors occur when: 1. Data enters a program from an untrusted source. 2. The data is used to dynamically construct a SQL query. **Example 1:** The following code dynamically constructs and executes a SQL query that searches for items matching a specified name. The query restricts the items displayed to those where `owner` matches the user name of the currently-authenticated user.

```
...
string userName = ctx.GetAuthenticatedUserName();
string query = "SELECT * FROM items WHERE owner = '"
               + userName + "' AND itemname = '"
               + ItemName.Text + "'";
sda = new SqlDataAdapter(query, conn);
DataTable dt = new DataTable();
sda.Fill(dt);
...
```

The query that this code intends to execute follows:

```
SELECT * FROM items
WHERE owner = <userName>
AND itemname = <itemName>;
```

However, because the query is constructed dynamically by concatenating a constant base query string and a user input string, the query only behaves correctly if `itemName` does not contain a single-quote character. If an attacker with the user name `wiley` enters the string `"name' OR 'a'='a"` for `itemName`, then the query becomes the following:

```
SELECT * FROM items
WHERE owner = 'wiley'
AND itemname = 'name' OR 'a'='a';
```

The addition of the `OR 'a'='a'` condition causes the where clause to always evaluate to true, so the query becomes logically equivalent to the much simpler query:

```
SELECT * FROM items;
```

This simplification of the query allows the attacker to bypass the requirement that the query only return items owned by the authenticated user; the query now returns all entries stored in the `items` table, regardless of their specified owner. **Example 2:** This example examines the effects of a different malicious value passed to the query constructed and executed in Example 1. If an attacker with the user name `wiley` enters the string `"name'); DELETE FROM items; --"` for `itemName`, then the query becomes the following two queries:

```
SELECT * FROM items
WHERE owner = 'wiley'
AND itemname = 'name';
```

```
DELETE FROM items;
```

```
--'
```

Many database servers, including Microsoft(R) SQL Server 2000, allow multiple SQL statements separated by semicolons to be executed at once. While this attack string results in an error on Oracle and other database servers that do not allow the batch-execution of statements separated by semicolons, on databases that do allow batch execution, this type of attack allows the attacker to execute arbitrary commands against the database. Notice the trailing pair of hyphens (`--`), which specifies to most database servers that the remainder of the statement is to be treated as a comment and not executed [4]. In this case the comment character serves to remove the trailing single-quote left over from the modified query.



On a database where comments are not allowed to be used in this way, the general attack could still be made effective using a trick similar to the one shown in Example 1. If an attacker enters the string "name'); DELETE FROM items; SELECT \* FROM items WHERE 'a'='a", the following three valid statements will be created:

```
SELECT * FROM items
WHERE owner = 'wiley'
AND itemname = 'name';
```

```
DELETE FROM items;
```

```
SELECT * FROM items WHERE 'a'='a';
```

One traditional approach to preventing SQL injection attacks is to handle them as an input validation problem and either accept only characters from a whitelist of safe values or identify and escape a blacklist of potentially malicious values. Whitelisting can be a very effective means of enforcing strict input validation rules, but parameterized SQL statements require less maintenance and can offer more guarantees with respect to security. As is almost always the case, blacklisting is riddled with loopholes that make it ineffective at preventing SQL injection attacks. For example, attackers can: - Target fields that are not quoted - Find ways to bypass the need for certain escaped meta-characters - Use stored procedures to hide the injected meta-characters Manually escaping characters in input to SQL queries can help, but it will not make your application secure from SQL injection attacks. Another solution commonly proposed for dealing with SQL injection attacks is to use stored procedures. Although stored procedures prevent some types of SQL injection attacks, they fail to protect against many others. Stored procedures typically help prevent SQL injection attacks by limiting the types of statements that can be passed to their parameters. However, there are many ways around the limitations and many interesting statements that can still be passed to stored procedures. Again, stored procedures can prevent some exploits, but they will not make your application secure against SQL injection attacks.

## **Recommendation**

The root cause of a SQL injection vulnerability is the ability of an attacker to change context in the SQL query, causing a value that the programmer intended to be interpreted as data to be interpreted as a command instead. When a SQL query is constructed, the programmer knows what should be interpreted as part of the command and what should be interpreted as data. Parameterized SQL statements can enforce this behavior by disallowing data-directed context changes and preventing nearly all SQL injection attacks. Parameterized SQL statements are constructed using strings of regular SQL, but when user-supplied data needs to be included, they create bind parameters, which are placeholders for data that is subsequently inserted. Bind parameters allow the program to explicitly specify to the database what should be treated as a command and what should be treated as data. When the program is ready to execute a statement, it specifies to the database the runtime values to use for the value of each of the bind parameters, without the risk of the data being interpreted as commands. The previous example can be rewritten to use parameterized SQL statements (instead of concatenating user supplied strings) as follows:

```
...
string userName = ctx.GetAuthenticatedUserName();
conn = new SqlConnection(_ConnectionString);
conn.Open();
SqlCommand query = new SqlCommand(
    "SELECT * FROM items WHERE itemname=@ItemName
    AND owner=@OwnerName", conn);
query.Parameters.AddWithValue("@ItemName", ItemName.Text);
query.Parameters.AddWithValue("@OwnerName", userName);
SqlDataReader objReader = objCommand.ExecuteReader();
...
```

More complicated scenarios, often found in report generation code, require that user input affect the command structure of the SQL statement, such as the addition of dynamic constraints in the WHERE clause. Do not use this requirement to justify concatenating user input into query strings. Prevent SQL injection attacks where user input must affect statement command structure with a level of indirection: create a set of legitimate strings that correspond to different elements you might include in a SQL statement. When



constructing a statement, use input from the user to select from this set of application-controlled values. Use bind parameters whenever input data must be directly included in a statement.

## Issue Summary

## Engine Breakdown

	SCA	WebInspect	SecurityScope	Total
SQL Injection	1	0	0	1
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>

### SQL Injection

**Critical**

**Package:** ConvertDBForHistoricalConfigurations

**Projects/Github/ATSPM/ConvertDBForHistoricalConfigurations/Program.cs, line 329 (SQL Injection)**

**Critical**

### Issue Details

**Kingdom:** Input Validation and Representation

**Scan Engine:** SCA (Data Flow)

### Audit Details

Analysis Not an Issue

### Audit Comments

**dlowe@utah.gov:** Tue Jul 31 2018 12:53:32 GMT-0600 (MDT)

This is reading its input from the database, not from a user.

### Source Details

**Source:** System.Data.SqlClient.SqlCommand.ExecuteReader()

**From:** ConvertDBForHistoricalConfigurations.Program.UpdateMigrationsTable

**File:** Projects/Github/ATSPM/ConvertDBForHistoricalConfigurations/Program.cs:313

```

310 var sqlQuery = "Select * from __MigrationHistory";
311 sqlconn.Open();
312 var command = new SqlCommand(sqlQuery, sqlconn);
313 var reader = command.ExecuteReader();
314 if (!reader.HasRows)
315 {
316 throw new Exception("No Migraitons found");

```





## SQL Injection

Critical

Package: ConvertDBForHistoricalConfigurations

Projects/Github/ATSPM/ConvertDBForHistoricalConfigurations/Program.cs, line 329 (SQL Injection)

Critical

### Sink Details

**Sink:** System.Data.SqlClient.SqlCommand.set\_CommandText()

**Enclosing Method:** UpdateMigrationsTable()

**File:** Projects/Github/ATSPM/ConvertDBForHistoricalConfigurations/Program.cs:329

**Taint Flags:** DATABASE, XSS

```
326 {  
327     updateCommand.Connection = GetDataBaseConnection();  
328     updateCommand.Connection.Open();  
329     updateCommand.CommandText = "update __MigrationHistory set MigrationId = '" +  
newMigrationName +  
330     "' where MigrationId = '" + migrationName + "'";  
331     updateCommand.ExecuteNonQuery();  
332 }
```



# Description of Key Terminology

## Likelihood and Impact

### Likelihood

Likelihood is the probability that a vulnerability will be accurately identified and successfully exploited.

### Impact

Impact is the potential damage an attacker could do to assets by successfully exploiting a vulnerability. This damage can be in the form of, but not limited to, financial loss, compliance violation, loss of brand reputation, and negative publicity.

## Fortify Priority Order

### Critical

Critical-priority issues have high impact and high likelihood. Critical-priority issues are easy to detect and exploit and result in large asset damage. These issues represent the highest security risk to the application. As such, they should be remediated immediately.

SQL Injection is an example of a critical issue.

### High

High-priority issues have high impact and low likelihood. High-priority issues are often difficult to detect and exploit, but can result in large asset damage. These issues represent a high security risk to the application. High-priority issues should be remediated in the next scheduled patch release.

Password Management: Hardcoded Password is an example of a high issue.

### Medium

Medium-priority issues have low impact and high likelihood. Medium-priority issues are easy to detect and exploit, but typically result in small asset damage. These issues represent a moderate security risk to the application. Medium-priority issues should be remediated in the next scheduled product update.

Path Manipulation is an example of a medium issue.

### Low

Low-priority issues have low impact and low likelihood. Low-priority issues can be difficult to detect and exploit and typically result in small asset damage. These issues represent a minor security risk to the application. Low-priority issues should be remediated as time allows.

Dead Code is an example of a low issue.



## About Fortify Solutions

Fortify is the leader in end-to-end application security solutions with the flexibility of testing on-premise and on-demand to cover the entire software development lifecycle. Learn more at [software.microfocus.com/en-us/solutions/application-security](https://software.microfocus.com/en-us/solutions/application-security).

