IMSVA 9.1 with Virtual Analyzer Integration (DDAN)

Best Practice Guide
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Preface

From Virtual Analyzer (DDAN) integration in IMSVA 8.5, IMSVA 9.0 and IMSVA 9.1 further enhances its integration features.

This document will guide IMSVA 9.1 Administrators in making IMSVA 9.1 work smoothly with Virtual Analyzer (DDAN), and meet their expectations.

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Virtual Analyzer Integration

Virtual Analyzer (DDAN) server version requirement

IMSVA 9.1 can integrate with the following DDAN versions:

- DDAN 5.0
- DDAN 5.1
- DDAN 5.5

Enabling Virtual Analyzer (DDAN) integration

1. Open the IMSVA web console. Navigate to Policy > Scan Engine, and select Enable Advanced Threat Scan Engine to enable ATSE. (For SNAP, “True file type” messages & “Name or extension” messages, it is not necessary to enable ATSE scanning.)

2. Navigate to Policy > Virtual Analyzer. The Virtual Analyzer Settings tab appears by default.

3. For Security Level Settings, choose Low (default) for a more conservative security level. Selecting High will provide a more aggressive security level.

4. For Timing Settings, it is suggested to keep it to the default value, 1800.

   This setting defines the maximum waiting time for the analysis result. If IMSVA cannot get the analysis result from Virtual Analyzer (DDAN) in the maximum waiting time, it will trigger Virtual Analyzer scanning exceptions.
5. Go to **Server Management** tab, and set the DDAN server info.

![Server Management > Add Server](image)

- Administrators can get the API key from the DDAN web console under **Help > About** info.
- IMSVA 9.1 supports multiple DDAN servers, and **Preference** represents each server’s priority.

6. An Administrator can set the multiple DDAN servers here. The lower the **Preference**, the higher the priority.

![Virtual Analyzer Server](image)

**Submission of messages to the Virtual Analyzer**

IMSVA will submit messages to the Virtual Analyzer (DDAN) when enabled. This task is performed in any of the following scenarios:
When ATSE detects messages containing possible virus, IMSVA will submit these messages to the Virtual Analyzer for double confirmation. If DDAN’s analysis result shows “No risk”, IMSVA will dismiss ATSE’s detection and pass the mail to the next rule.

If the Administrator enables the Social Engineering Attack Protection (SNAP) feature, and this feature detects messages, IMSVA will submit these messages to the Virtual Analyzer for double verification.
Scanning process flow:

- If the Administrator set to submit any true file type attachments to DDAN, IMSVA will submit the related messages to the Virtual Analyzer for analyzing. Such would be creating a rule to submit executable files, documents and compressed files to Virtual Analyzer for analyzing.

### Table 1: True File Type Selection

<table>
<thead>
<tr>
<th>Select: Selected attachment types</th>
</tr>
</thead>
<tbody>
<tr>
<td>✅ Executable</td>
</tr>
<tr>
<td>✅ Document</td>
</tr>
<tr>
<td>✅ Image</td>
</tr>
<tr>
<td>✅ Media</td>
</tr>
<tr>
<td>✅ Compressed files</td>
</tr>
<tr>
<td>✅ Microsoft Windows shortcuts</td>
</tr>
</tbody>
</table>

### Figure 6: Virtual Analyzer Scanning

- Submit files to Virtual Analyzer

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If the Administrator set to submit any name or extension attachments to DDAN, IMSVA will submit the related messages to the Virtual Analyzer for analyzing. Such would be creating a separate rule to submit *.js files to Virtual Analyzer for analyzing.

![Name or Extension Settings](image)

**Use the full filename (not the extension) and separate each entry**

*.*.js

![Virtual Analyzer Scanning](image)

**Submit files to Virtual Analyzer**

(Figure 7)

Note: If it is preferred to submit both True File Type messages and Name or Extension messages to Virtual Analyzer for analyzing, it is suggested to create separate rules to address this - one rule for True File Type messages and another rule for Name or Extension messages.)
Virtual Analyzer Queue

Administrators can query the “Virtual Analyzer” queue (IMSVA UI > Mail Areas & Queues > Query > Virtual Analyzer) for the queued mails waiting for DDAN’s analysis result:

![Virtual Analyzer Queue Page](image)

Figure1

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Virtual Analyzer scanning exceptions

If IMSVA cannot get any results from the Virtual Analyzer (DDAN) in the maximum waiting time, an exception will occur.

<table>
<thead>
<tr>
<th>Exception</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security settings violations</td>
<td>Quarantine and Notify</td>
</tr>
<tr>
<td>Malformed messages</td>
<td>Quarantine and Notify</td>
</tr>
<tr>
<td>Encryption exceptions</td>
<td>Quarantine and Notify</td>
</tr>
<tr>
<td>Virtual Analyzer scanning exceptions</td>
<td>Quarantine and Notify</td>
</tr>
</tbody>
</table>

Figure 2

Virtual Analyzer related logs

Administrators can query the email logs which are detected by DDAN from UI > Logs > Query.

![Log Query Example](image)

Figure 3
If DDAN analyzes a mail failure, or IMSVA result queries from DDAN fail until expiration, Virtual Analyzer scanning exceptions will be triggered and the Advanced Threat Type will display “Probable advanced threat”.
Virtual Analyzer Cache Mechanism

IMSVA 9.1 will cache the virtual analysis result for a significant time. IMSVA will check the virtual analysis cache first before submitting the message to DDAN for analyzing. If there is a cache result, IMSVA will use this cache result directly instead of submitting the file to DDAN.

The cache contains files’ SHA1 info and result. That means when multiple messages with the same attachment enter IMSVA, if the attachment’s cache result exists, IMSVA will just use the cache result directly and there is no need to submit the mail to DDAN.

The cache would be cleaned everytime DTAS agent restarts; while IMSVA will also automatically restart DTAS agent service every day at around 23:00. This means IMSVA will keep the virtual analysis cache result with the maximum time less than one day.

Administrators can also manually restart DTAS agent (S99DTASAGENT restart) to clean the cache.
Connected Threat Defense (CTD)

IMSVA 9.1 supports Connected Threat Defense (CTD) solution. Administrators can configure IMSVA to subscribe to the Suspicious Object (SO) lists from the Control Manager server. Using the Control Manager console, you can create customized actions for objects detected by the suspicious object lists to provide custom defense against threats in Trend Micro products.

- File checking: IMSVA can sync Suspicious Object (SO) file list information from the Control Manager server and use the SO to do file checking.

- URL checking: This is optional. In order to address this feature, IMSVA needs to use Smart Protection Server (Local SPS server) to do Web Reputation Services (WRS) checking.

Action Mapping

TMCM can configure the Suspicious Object (SO) with Log, Block or Quarantine action, and IMSVA will map the action as mentioned in following table:

<table>
<thead>
<tr>
<th>SO - Files</th>
<th>Action on TMCM</th>
<th>Mapped Action on IMSVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO - Files</td>
<td>N/A or Log</td>
<td>Pass &amp; Log</td>
</tr>
<tr>
<td>SO - URLs</td>
<td>Block or Quarantine</td>
<td>Quarantine &amp; Log</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td>N/A or Log</td>
<td>Pass &amp; Log</td>
</tr>
<tr>
<td></td>
<td>Block</td>
<td>Quarantine &amp; Log</td>
</tr>
</tbody>
</table>

**Configure Smart Protection Server (Optional)**

After registering Smart Protection Server (Local SPS Server) to the TMCM server, it will be able to sync Suspicious URL info from TMCM.

If IMSVA enables Suspicious URL list feature (by selecting Smart Protection Server on the Web Reputation Services tab under Policy > Smart Protection), IMSVA will be able to detect suspicious URL.

**Register IMSVA to TMCM**

1. Open IMSVA web console, and navigate to Administration > IMSVA Configuration > Connections.
2. Click TMCM Server tab.
3. Configure the TMCM server info.
4. Select Suspicious file list under Suspicious Object List Settings section.
5. (Optional) For IMSVA to detect suspicious URL, an Administrator can select Suspicious URL list under Suspicious Object List Settings section. (In order to enable this feature, IMSVA needs to use Smart Protection Server (Local SPS server) to do Web Reputation Services (WRS) checking.)
Configure TMCM

After registering IMSVA to TMCM, in order to make IMSVA can synchronize suspicious file list from TMCM, Administrators will also have to provide IMSVA logon credentials on the TMCM console.

1. Open TMCM web console, navigate to Administration > Managed Servers.
2. Next to Server Type, select InterScan Messaging Security Virtual Appliance.
3. Find your IMSVA server and click the Edit icon in the Actions column.
4. The Edit Server screen appears, under Authentication, provide your IMSVA log in credentials.
5. Click Save.

Messages detected by Suspicious Object (SO)

IMSVA 9.1 contains following two hidden rules for suspicious object detection:

- TMCM_Suspicious file detection
- TMCM_Suspicious URL detection

These rules are executed after virus rules and have higher priority than other rules.

Scenario 1: A known virus was defined in both pattern file and SO list. IMSVA will use pattern file to detect it as a real virus.

Scenario 2: An unknown malicious file (not included in pattern file) was defined in SO list. IMSVA will detected it as “Suspicious Object” with the rule name “TMCM_Suspicious file detection”:

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Action</th>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016年10月20日 12:30:17</td>
<td>Quarantined</td>
<td>TMCM_Suspicious file detection</td>
</tr>
<tr>
<td>2016年10月20日 12:30:13</td>
<td>Quarantined</td>
<td>TMCM_Suspicious file detection</td>
</tr>
<tr>
<td>2016年10月20日 12:30:07</td>
<td>Quarantined</td>
<td>TMCM_Suspicious file detection</td>
</tr>
</tbody>
</table>
DDAN-Related Rule Samples

Enabling Social Engineering Attack Protection (SNAP) Scanning

SNAP is a new feature available in IMSVA 9.0. This scanning feature is disabled by default and Administrators may choose to enable it.

With SNAP enabled, Administrators can either create a new rule only for these SNAP features, or modify current spam rules.

Modify a current spam rule to enable SNAP:
1. Navigate to IMSVA UI > Policy > Policy List.
2. Click Default spam rule.
3. Edit the scanning conditions, and select Social Engineering Attack Protection:
4. Save the changes.

SNAP may still be enabled even without an integrated Virtual Analyzer (DDAN):
- Without Virtual Analyzer integrated, SNAP will work in conservative mode.
- With Virtual Analyzer integrated, SNAP will work in aggressive mode, and IMSVA will submit these detected messages to the Virtual Analyzer for double verification.

**Submitting all executable files to the Virtual Analyzer for analysis**

**Rule requirement:**
Upon submission of messages containing executable attachments to the Virtual Analyzer:
- If the analysis result is high risk, IMSVA will delete the entire message and send a notification to the Administrator.
- If the analysis result is no risk, low risk or medium risk, IMSVA will not intercept the messages in this rule.

**Steps to create this rule:**
1. Open the IMSVA web console.
2. Go to **Policy > Virtual Analyzer > Virtual Analyzer Settings**.
3. Make sure that Security Level Settings is set to **Low**.
4. Go to **Policy > Policy Notifications**, and create a new notification named “VA High Risk Mail Notification” with the following additional information:
   - Recipient: Administrator's mail address.
   - Subject: Virtual Analyzer detected high risk messages
   - Message body:
     - Sender: %SENDER%
     - Recipient: %RCPTS%
Subject: %SUBJECT%

DDAN detected %FILENAME% in this mail as high risk and deleted the whole mail.

5. Go to Policy > Policy List, and add a new rule for all messages.

   ![Policy List Diagram]

   Figure 5

6. For Scanning Conditions, select Attachment > True file type, then check both Executable and Submit files to Virtual Analyzer options. Click Save.

   ![Attachment True File Type Diagram]

   Figure 7
7. For Action, select both **Delete entire message** and **Send policy notifications**. Choose the notification name, "Virtual Analyzer Notification", created earlier.
8. Save the rule.
Submitting all *.js files and *.vbs files to the Virtual Analyzer for analysis

Note: If you prefer to submit both True File Type messages and Name or Extension messages to the Virtual Analyzer for analysis, it is suggest to create separate rules to address this.

**Rule requirement:**
Upon submission of messages containing script attachments (*.js or *.vbs) to the Virtual Analyzer:

- If the analysis result contains risk, IMSVA will quarantine the message and send a notification to the Administrator.
- If the analysis result is no risk, IMSVA will not intercept the messages in this rule.

**Steps to create this rule:**
1. Open the IMSVA web console.
2. Go to Policy > Virtual Analyzer > Virtual Analyzer Settings.
3. Make sure that Security Level Settings is set to High.
4. Go to Policy > Policy Notifications, and create a new notification named “VA Risk Mail Notification” with the following additional information:
   - Recipient: Administrator’s mail address.
   - Subject: Virtual Analyzer detected risk messages
   - Message body:
     - Sender: %SENDER%
     - Recipient: %RCPTS%
     - Subject: %SUBJECT%

   DDAN detected %FILENAME% in this mail as risk and quarantined the whole mail.

5. Go to Policy > Policy List, and add a new rule for all messages.
6. For Scanning Conditions, select **Attachment > Name or extension**, then input the name extension as “*.js;*.vbs” and check Submit files to Virtual Analyzer. Click **Save**.

7. For Action, select both **Quarantine to** and **Send policy notifications**. Choose the notification name, "VA Risk Mail Notification ", created earlier.

8. Save the rule.
Troubleshooting

Issue: All the messages submitted to the Virtual Analyzer are quarantined.

The root cause would probably be that DDAn is very busy and IMSVA could not get any response from the Virtual Analyzer in the maximum waiting time, thus triggering the Virtual Analyzer scanning exceptions. The IMSVA 9.1 DTAS Agent default query delay time is 60 seconds, which means that IMSVA will try to query the Virtual Analyzer’s analysis result after 1 minute from the time the message was submitted. If there are no results, IMSVA will retry every minute until the maximum timing settings or maximum retry times (20 times). The mail would then trigger a virtual analyzer scanning exception.

<table>
<thead>
<tr>
<th>Timing Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum time allowed for analysis: 1800 seconds (Value range: 300-1800)</td>
</tr>
</tbody>
</table>

Figure 11

Suggestions:
- Set the maximum time larger than 900 seconds.
- If DDAN is always busy, try to reduce the files that are sent for analyzing.
Asynchronization Mode

By default, IMSVA 9.0 works with Virtual Analyzer within synchronization mode, as previously described.

IMSVA 9.0 build 1513 and later supports asynchronization mode which Administrators may enable.
In asynchronization mode, there are two scenarios:

- Messages are marked as suspicious by the ATSE or SNAP engine.
  - IMSVA 9.0 will take the rule action immediately without waiting for the evaluation result from the Virtual Analyzer.
  - IMSVA 9.0 will still send a copy of the email sample to the Virtual Analyzer for further analysis and will add the information to the corresponding policy event log once it receives the results.

- Messages with true file types are sent to the Virtual Analyzer for analysis.
  - IMSVA 9.0 will bypass the true file types filter rule directly without waiting for the evaluation result from the Virtual Analyzer.
  - IMSVA 9.0 will still send a copy of the email sample to the Virtual Analyzer for further analysis and will add the information to the corresponding policy event log once it receives the results.

For asynchronization mode, IMSVA will perform real-time submission to DDAN, but will also implement the virus rule action and bypass true file type action at the same time. It will then update the logs based on the DDAN result.

Administrators may contact Trend Micro Technical Support for information on enabling IMSVA to support Virtual Analyzer integration mode (Hot Fix Build 1513).

FAQ

Question:
Can IMSVA 9.1 with DDAN integrated detect macro threats?

Answer:
Yes, IMSVA 9.1 supports macro threat detection. Please refer to KB 1110914 for more detailed information.

Question:
How do ATSE and DDAN handle compressed files?
Answer:

Similar to normal files, ATSE and DDAN can uncompress the file and check the files in it.

Question:

If IMSVA encounters timeout issues and cannot get the analysis result from DDAN, what will happen?

Answer:

When failing to query the analysis result from DDAN, IMSVA will retry before maximum waiting time. If it still fails, Virtual Analyzer scanning exceptions will be triggered. The default action for the mail is “Quarantine and Notify”.