Azure Sentinel + Configuration Manager = Better together

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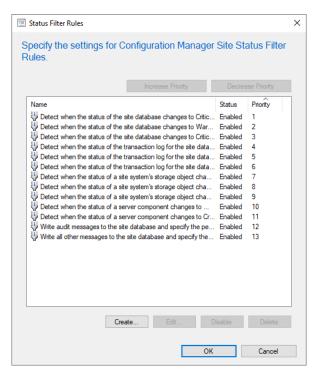
Microsoft MVP: Enterprise Mobility

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Description

A few months ago, Microsoft had an Azure Sentinel hackathon, and I thought that maybe I could build-up one POC solution for Azure Sentinel. My idea was to capture all the admin activities and send the data immediately off the Primary Site server. The reason why I decided to build this POC is that the built-in auditing isn't that good, and it needs some modernization. Luckily we have such good services like Log Analytics, Azure Sentinel, etc.

Configuration Manager allows you to create Status Filter Rules, and with that, you can save the activities to Event Log, but the data isn't that good. So that's why I decided to write extra PowerShell scripts to capture additional data for each Event.



Configuration Manager Status Filter Rules

Currently included events in this POC

- Somebody added or removed a new administrator
- Configuration Manager Client Settings has been changed
- New Application deployment
- Change in Configuration Manager Site settings
- New Security Role
- Someone added a new Script
- Script execution against devices
- Someone changed a Script
- Script execution against a Collection

- Someone approved a Script
- Someone added a new Collection
- Collection has been changed
- Collection has been removed
- Someone changed a Task Sequence
- New Software Updates group
- Someone removed the Software Updates group
- Someone started a Remote Control session
- Remote Control session ended
- Someone removed a Device
- New Package

AZMEMCM Configuration

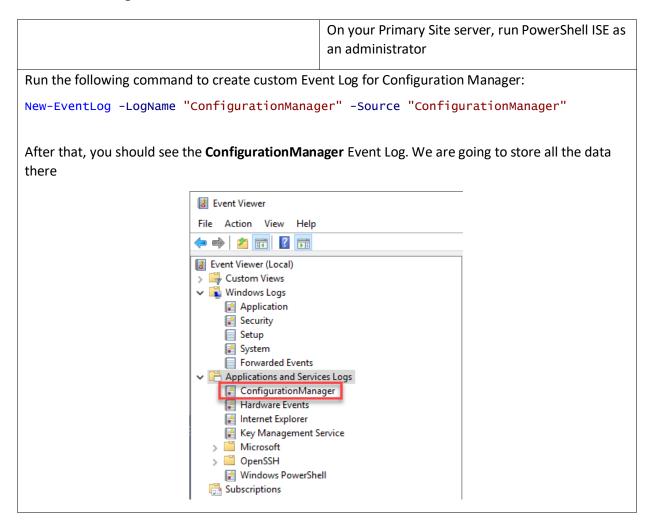
Pre-requisites

For this solution, you need:

- Configuration Manager Primary Site
 - o Administrative permissions in Configuration Manager and underline OS
- Log Analytics Workspace
- Azure Sentinel (optional)
 - Azure Sentinel not required for this to work, but you can create different hunting queries

Configuration

Custom Event Log

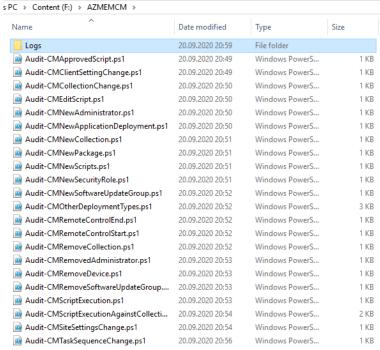


PSEventViewer PowerShell module installation

Still, in PowerShell ISE run the following: Install-Module PSEventViewer -Force -Verbose		

Download scripts from GitHub



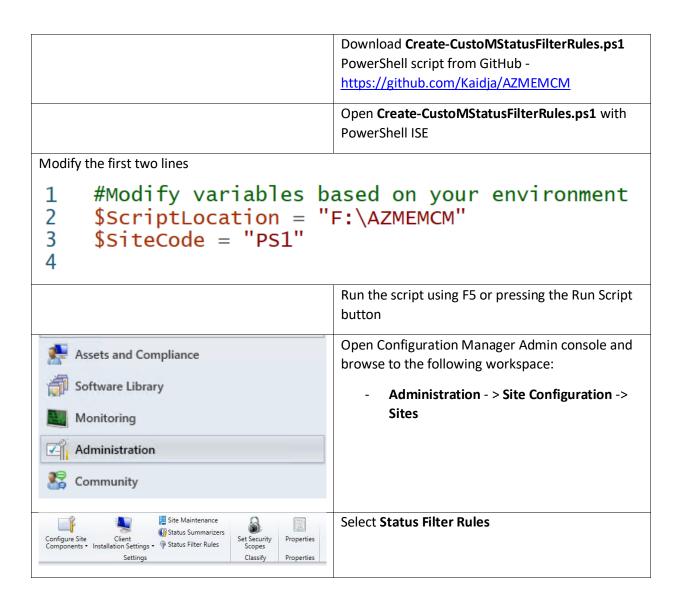


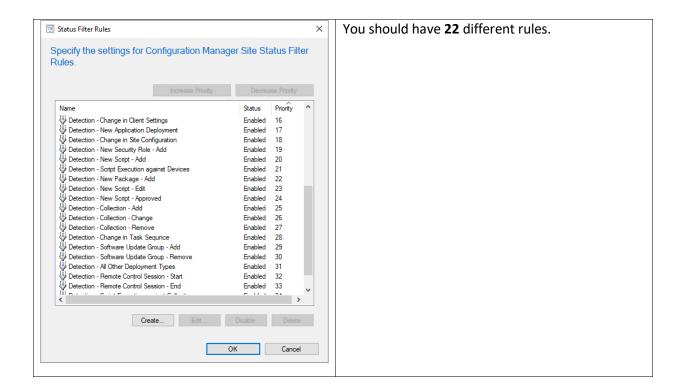
You should have 22 scripts under F:\AZMEMCM folder.

Create **Logs** folder the main root folder

Create Status Filter Rules

	On your Primary Site server, run PowerShell ISE as
	an administrator

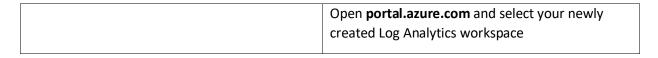


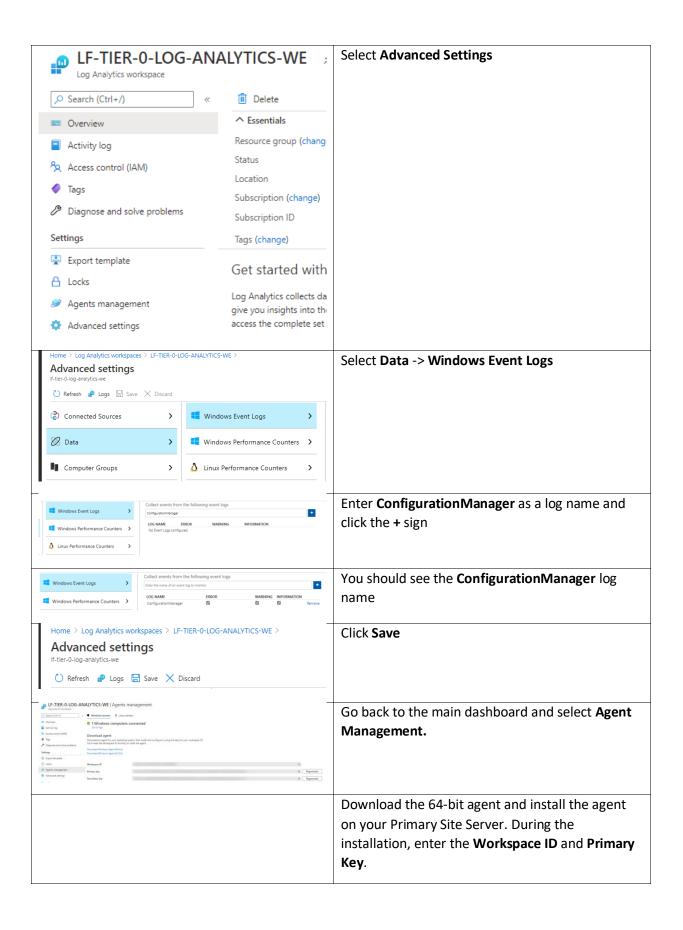


Create Log Analytics workspace

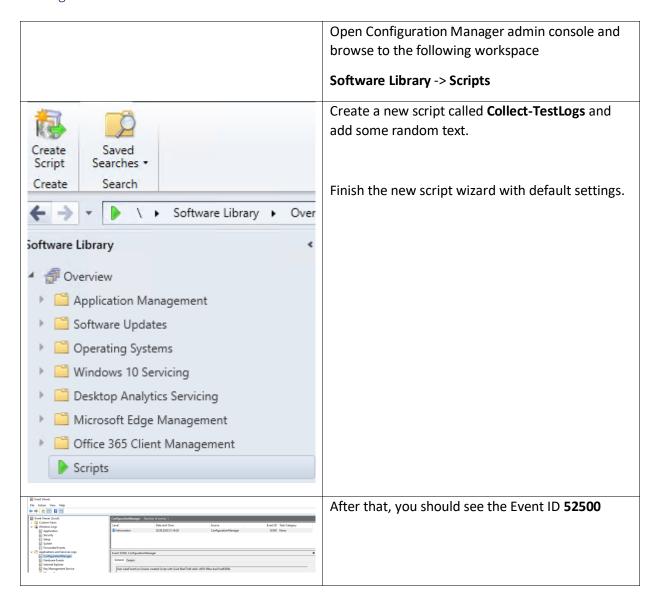
Follow the following steps to create the Log
Analytics workspace

Configure Log Analytics workspace





Testing



Use cases and samples

Now that our environment is up and running, we can start playing around with Log Analytics queries.

Software Updates

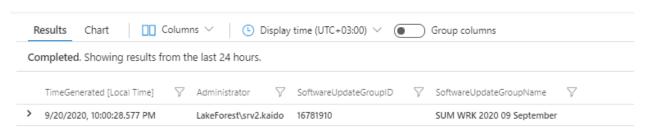
New Software Update Group

• Example KQL query

```
//New Software Update Group

Event
| where EventID == 30219 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend SoftwareUpdateGroupID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| extend SoftwareUpdateGroupName = extractjson("$['DataItem']['EventData']['Data'][3]", MyData)
| project Administrator, SoftwareUpdateGroupID, SoftwareUpdateGroupName, TimeGenerated
```

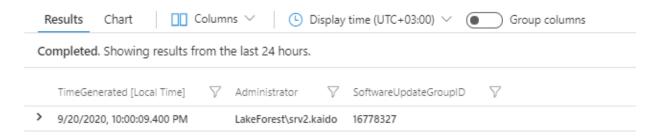
Results



Someone removed the Software Update Group

```
//Removal of Software Update Group

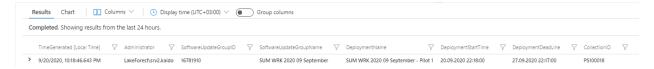
Event
| where EventID == 30221 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend SoftwareUpdateGroupID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| project Administrator, SoftwareUpdateGroupID, TimeGenerated
```



Software Updates deployment

Example KQL query

```
//Software Updates Deployments
Event
| where EventID == 30196 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend SoftwareUpdateGroupID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
extend SoftwareUpdateGroupName = extractjson("$['Dataltem']['EventData']['Data'][3]", MyData)
extend DeploymentName = extractjson("$['Dataltem']['EventData']['Data'][4]", MyData)
| extend DeploymentStartTime = extractjson("$['DataItem']['EventData']['Data'][5]", MyData)
| extend DeploymentDeadLine = extractjson("$['DataItem']['EventData']['Data'][6]", MyData)
extend CollectionID = extractjson("$['DataItem']['EventData']['Data'][7]", MyData)
| extend Featuretype = extractjson("$['DataItem']['EventData']['Data'][8]", MyData)
| where Featuretype == "Software Update"
| project Administrator, SoftwareUpdateGroupID,
SoftwareUpdateGroupName,DeploymentName,DeploymentStartTime,DeploymentDeadLine,Collectio
nID, TimeGenerated
```



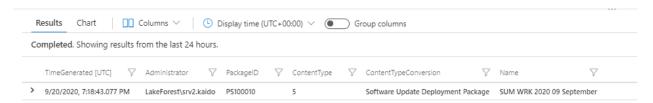
Packages

Example KQL query

```
//New package creation - generic ID for different package types
// Package IDs
// O - classic software package, 5 - Software Update Deployment Package, 4 - Task Sequence

Event
| where EventID == 30000 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend PackageID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| extend ContentType = extractjson("$['DataItem']['EventData']['Data'][3]", MyData)
| extend ContentTypeConversion = case(ContentType == 0, "Package",ContentType == 5,
"Software Update Deployment Package",ContentType == 4, "Task Sequence","unknown")
| extend Name = extractjson("$['DataItem']['EventData']['Data'][4]", MyData)
| project Administrator, PackageID, ContentType, ContentTypeConversion, Name, TimeGenerated
```

Results



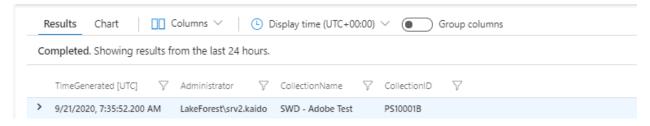
Collections

Collection creation

Example KQL query

```
//New Collection in Configuration Manager

Event
| where EventID == 30015 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['Dataltem']['EventData']['Data'][1]", MyData)
| extend CollectionName = extractjson("$['Dataltem']['EventData']['Data'][3]", MyData)
| extend CollectionID = extractjson("$['Dataltem']['EventData']['Data'][2]", MyData)
| project Administrator, CollectionName, CollectionID, TimeGenerated
```



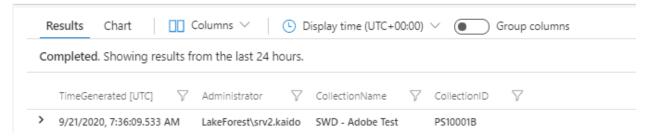
Collection removal

Example KQL query

```
//Collection removed

Event
| where EventID == 30017 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['Dataltem']['EventData']['Data'][1]", MyData)
| extend CollectionName = extractjson("$['Dataltem']['EventData']['Data'][3]", MyData)
| extend CollectionID = extractjson("$['Dataltem']['EventData']['Data'][2]", MyData)
| project Administrator, CollectionName, CollectionID, TimeGenerated
```

Results

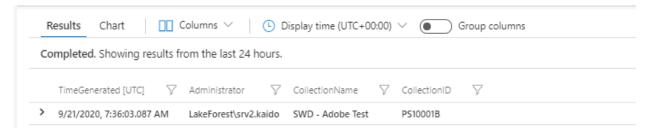


Collection change

Example KQL query

```
//Collection Change in Configuration Manager

Event
| where EventID == 30016 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend CollectionName = extractjson("$['DataItem']['EventData']['Data'][3]", MyData)
| extend CollectionID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| project Administrator, CollectionName, CollectionID, TimeGenerated
```



Scripts

New Script

Example KQL query

```
//New Script in Configuration Manager

Event

| where EventID == 52500 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend ScriptGUID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| extend ScriptContent = extractjson("$['DataItem']['EventData']['Data'][4]", MyData)
| extend Name = extractjson("$['DataItem']['EventData']['Data'][5]", MyData)
| project Administrator, ScriptGUID, ScriptContent, Name, TimeGenerated
```

Results



ScirptContent holds the actual script from the Configuration Manager. You can decode the script.

Script approved

```
//Script approved in Configuration Manager

Event
| where EventID == 52501 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend ScriptGUID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| extend ScriptContent = extractjson("$['DataItem']['EventData']['Data'][4]", MyData)
| extend Name = extractjson("$['DataItem']['EventData']['Data'][5]", MyData)
| project Administrator, ScriptGUID, ScriptContent, Name, TimeGenerated
```



Script execution against devices

Example KQL query

```
//Script execution against devices

Event
| where EventID == 40806 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend ScriptGUID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| extend ScriptContent = extractjson("$['DataItem']['EventData']['Data'][4]", MyData)
| extend Name = extractjson("$['DataItem']['EventData']['Data'][6]", MyData)
| extend DeviceCount = extractjson("$['DataItem']['EventData']['Data'][6]", MyData)
| project Administrator, ScriptGUID, ScriptContent, Name, DeviceCount, TimeGenerated
```

Results



Script execution against Collection

Example KQL query

//Script execution against Collection Event | where EventID == 40805 and EventLog == "ConfigurationManager" | extend MyData = tostring(parse_xml(EventData)) | extend Administrator = extractjson("\$['DataItem']['EventData']['Data'][2]", MyData) | extend ScriptGUID = extractjson("\$['DataItem']['EventData']['Data'][2]", MyData) | extend ScriptContent = extractjson("\$['DataItem']['EventData']['Data'][4]", MyData) | extend Name = extractjson("\$['DataItem']['EventData']['Data'][6]", MyData) | extend Collection = extractjson("\$['DataItem']['EventData']['Data'][6]", MyData) | extend CollectionID = extractjson("\$['DataItem']['EventData']['Data'][7]", MyData) | project Administrator, ScriptGUID, ScriptContent, Name, Collection, CollectionID, TimeGenerated



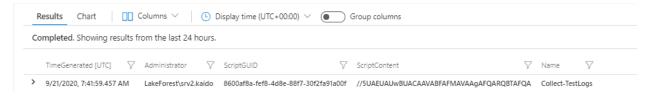
Script change

Example KQL query

```
//Edit Script in Configuration Manager

Event
| where EventID == 52506 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend ScriptGUID = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| extend ScriptContent = extractjson("$['DataItem']['EventData']['Data'][4]", MyData)
| extend Name = extractjson("$['DataItem']['EventData']['Data'][5]", MyData)
| project Administrator, ScriptGUID, ScriptContent, Name, TimeGenerated
```

Results

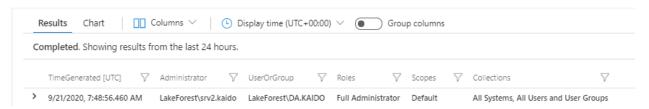


Security

New Administrator

```
//Somebody added a new user / group - EventID 31240

Event
| where EventID == 31240 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['Dataltem']['EventData']['Data'][1]", MyData)
| extend UserOrGroup = extractjson("$['Dataltem']['EventData']['Data'][2]", MyData)
| extend Roles = extractjson("$['Dataltem']['EventData']['Data'][3]", MyData)
| extend Scopes = extractjson("$['Dataltem']['EventData']['Data'][4]", MyData)
| extend Collections = extractjson("$['Dataltem']['EventData']['Data'][5]", MyData)
| project Administrator, UserOrGroup, Roles, Scopes, Collections, TimeGenerated
```



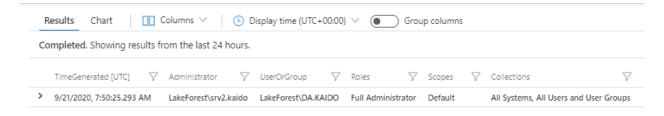
Administrator removed

Example KQL query

```
//Somebody removed a user or security group

Event
| where EventID == 31242 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend UserOrGroup = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| extend Roles = extractjson("$['DataItem']['EventData']['Data'][3]", MyData)
| extend Scopes = extractjson("$['DataItem']['EventData']['Data'][4]", MyData)
| extend Collections = extractjson("$['DataItem']['EventData']['Data'][5]", MyData)
| project Administrator, UserOrGroup, Roles, Scopes, Collections, TimeGenerated
```

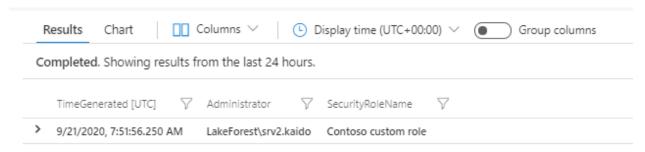
Results



New security role

```
//New Security Role

Event
| where EventID == 31200 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend SecurityRoleName = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| project Administrator, SecurityRoleName, TimeGenerated
```

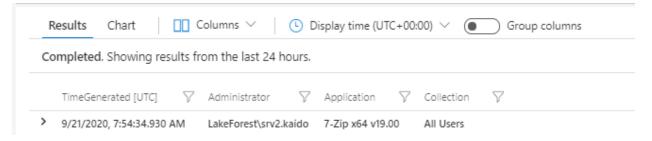


Applications

New Application deployment

Example KQL query





Operating system deployment

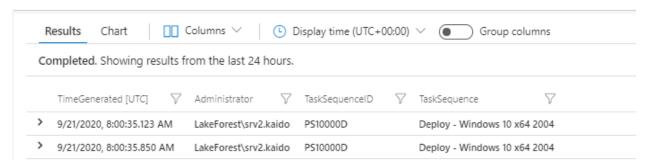
Change in Task Sequence

Example KQL query

```
//Change in Task Sequence

Event
| where EventID == 30001 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['Dataltem']['EventData']['Data'][1]", MyData)
| extend TaskSequenceID = extractjson("$['Dataltem']['EventData']['Data'][2]", MyData)
| extend TaskSequence = extractjson("$['Dataltem']['EventData']['Data'][3]", MyData)
| project Administrator, TaskSequenceID, TaskSequence, TimeGenerated
```

Results

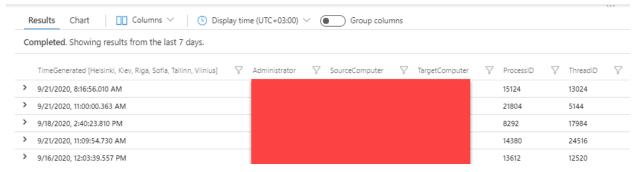


Remote Control

Session start

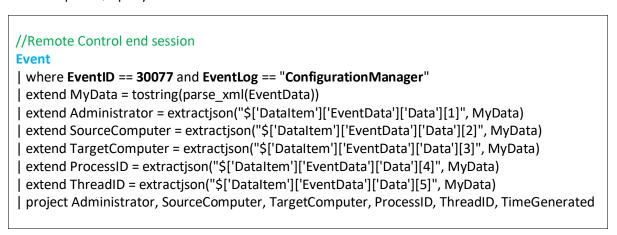
```
//Remote Control Start session

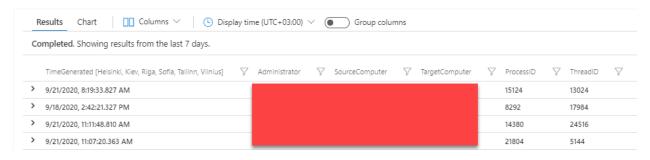
Event
| where EventID == 30076 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['Dataltem']['EventData']['Data'][2]", MyData)
| extend SourceComputer = extractjson("$['Dataltem']['EventData']['Data'][2]", MyData)
| extend TargetComputer = extractjson("$['Dataltem']['EventData']['Data'][3]", MyData)
| extend ProcessID = extractjson("$['Dataltem']['EventData']['Data'][4]", MyData)
| extend ThreadID = extractjson("$['Dataltem']['EventData']['Data'][5]", MyData)
| project Administrator, SourceComputer, TargetComputer, ProcessID, ThreadID, TimeGenerated
```



Session end

Example KQL query





Site Configuration

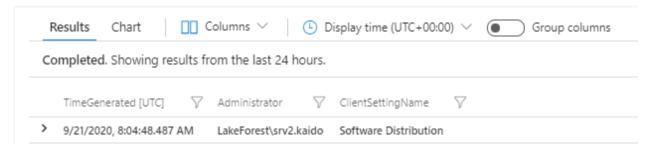
Client Settings change

• Example KQL query

```
//Somebody changed the Client Settings

Event
| where EventID == 30043 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend ClientSettingName = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| project Administrator, ClientSettingName, TimeGenerated
```

Results



Hierarchy changes

Example KQL query

```
//Change in Primary Site Settings

Event
| where EventID == 30031 and EventLog == "ConfigurationManager"
| extend MyData = tostring(parse_xml(EventData))
| extend Administrator = extractjson("$['DataItem']['EventData']['Data'][1]", MyData)
| extend SiteName = extractjson("$['DataItem']['EventData']['Data'][2]", MyData)
| project Administrator, SiteName, TimeGenerated
```

