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[RPS v3.1.0 Release Notes](#)

# Rapid Provisioning System Release Notes

Last updated on April 20, 2021.

Released on February 28, 2020

## What's new in 3.1.0 (Feb 28)

- New PowerShell CMDLETS
  - New-RpsGroupCondition: Creates a Condition object to add to a Resource Group or Target Group to dynamically add Members.
  - Get-RpsGroupFilter: Gets the filter object on a Resource Group or Target Group
  - Remove-RpsGroupCondition: Removes a condition from a Resource Group or Target Group
  - Get-RpsResolvedParameter: Resolves a Parameter against a Target Item.
  - New-RpsPackageStream: Creates new Package Stream and Packages
  - New-RpsPackage: Creates a new Package object and adds it to a Package Stream
  - Update-RpsPackageStream: Updates an existing Package Stream
  - Remove-RpsPackage: Removes an existing Package from a Package Stream and optionally removes all assignments
  - Remove-RpsPackageStream: Removes an existing Package Stream, Packages, and optionally removes all assignments
  - Get-RpsPackage: Gets an existing Package
  - Get-RpsPackageStream: Gets an existing Package Stream
  - Get-RpsMaintenanceWindow: Gets an existing Maintenance Window
  - New-RpsMaintenanceWindow: Creates a new Maintenance Window
  - Remove-RpsMaintenanceWindow: Removes an existing Maintenance Window
  - Set-RpsMaintenanceWindow: Sets a Maintenance Window if it exists or creates a new Maintenance Window if it doesn't exist
  - Enable-RpsCdn: Turns On/Off Bits and/Or Dfsr communication.
- Updated PowerShell CMDLETS
  - New-RpsResourceGroup: Add parameters Operator and Condition
  - New-RpsTargetGroup: Add parameters Operator and Condition
- Updated DSC Utilities for resolving PowerShell Parameters to take a TargetItem and the ParameterMetadata object. You now do not need to have a resource assignment to a DSC partial or the parameter imported into the CMDB. You would use this in an external PowerShell script to resolve properties from the CMDB.
- Updated PowerShell Functions
  - Resolve-RpsNode: **(Breaking change)** The function now requires user to be in an active session context or connected to a SQL database. It no longer uses hard-coded strings to resolve the names of nodes.
  - Resolve-RpsNode: Can optionally return the Node object versus just the string name
  - Resolve-RpsNode: Added ability to filter out default node
- Updated RPS Installer
  - Added ability to deploy a preconfigured RHEL virtual machine with the RHELTemplateFilename switch parameter
  - Group ContentCreators that has permission to the CDN folder for adding content (e.g. Packages)
- Sync Changes
  - Item Properties have a SyncScope to define how the property should be synchronized
    - Public - synchronize
    - Private - do not synchronize

- Internal - synchronize only to internal nodes
  - InternalDownstream - synchronize only to internal children
  - InternalUpstream - synchronize only to internal parents
- CDN Changes
  - New properties on Node to define the protocol: ParentCdnProtocol and ChildCdnProtocol - This will be BITS or DFSR so the nodes know how to communicate with one another
  - Set-RpsResourceType: Add parameters:
    - CDNDirection (Upstream or Downstream) - This can be used by content (e.g. Packages) to specify the direction it should be synchronized
    - IsContentDistribution - This indicates whether a resource refers to content that will be synchronized
  - New Resource Item call CdnSettings that gets globally created with two Internal properties, IsBitsEnabled and IsDfsrEnabled. The two properties only sync within internal nodes. i.e. within a unit.
- New RPS Type Definitions
  - Package: Defines a Package and its properties
  - Package Stream: Defines a Package Stream and its properties
- New DSC Resources
  - RPS Package Manager: DSC Resource for RPS Package Streams and Packages. Provides tools to Get, Set, and Test Packages for a Target
- New PowerShell Modules
  - RPS Package Provider: Provides methods to Find, Install, or Uninstall packages; Get list of installed packages; Add or Remove Packages Sources
- New RPS Web UI Features
  - Packaging section added (RPS Menu > Distribution > Packaging)
    - Approvals tab: Approve or Reject Package Streams
    - Scheduling tab: Create, Edit, and Delete Maintenance Windows
    - History tab: View the deployment status of Package Streams, Packages, and Assignments
- Added new function Test-DscModuleConflict to use for testing for required DSC Module conflicts across all assigned partials for a single Target Item.
- Added Get-AdminRoleCredential to Rps-API-Utilities; used to determine which credential role to use in a task

## Known Issues in 3.1.0

- Web UI
  - Closing the Remove Resource modal resets filters
    - From the Resources screen, if you have a filter added for Packages and you confirm and remove a package it will clear your filters
    - Workaround: Manually re-apply your filters
  - Cannot assign Target Items to an Item Group from the Web UI
    - From the RPS Web UI menu: Targeting > Item Groups
    - Open the patchable target group by clicking on the name
    - Open the Members accordion
    - When you try to click "+ Add New Item" you'll receive an error

- Workaround: PowerShell can be used to add Target Items to an Item Group:

```
$ti = Get-RpsTargetItem -Id IdOfMyTargetItem
$tg = Get-RpsTargetGroup -Id IdOfMyGroup
$tg.AddChildItem($ti)
$tg.Update()
```

- glyphs icons halflings are not signed and do not display in Web UI when deployed due to STIG
  - Some icons (e.g. status icons for Packages) do not display in Internet Explorer when deployed due to STIG
  - Workaround: The status can be easily discerned by font color and wording of the statuses.
- API
  - Dates are parsed out of Properties as strings and we always lose timezone specifications
    - This could cause some times to be slightly incorrect depending on how they were stored and/or retrieved
    - Workaround: No known workaround.
  - Currently there is no support for Maintenance Windows that span across 2 or more days
    - Workaround: Create 2 maintenance windows - one for each day so it covers the entire period of time desired.
- PowerShell cmdlets
  - DateTime for Start/End date in Get-RpsMaintenanceWindow displays inaccurate time
    - Get-RpsMaintenanceWindow returns the Start/End date which includes a time, however, the time is inaccurate and it conflicts with the start/end times that are also returned to the user
    - Workaround: No known workaround. This is a visual/display issue. The time portion included alongside the Start/End dates that are shown are not what is being used. The actual times being used are displayed separately.
- Package Manifest **Conditions** element **Value** field does not support multiple values separated by the pipe delimiter |
  - **Error Details:** The following PackageManifest code snippet is an example using pipe delimiter | in **Conditions**, which will fail:

```
<InstallerFileName>opera.msi</InstallerFileName>
<Conditions>
  <PackageAssignmentCondition>
    <Property>Name</Property>
    <Operator>Eq</Operator>
    <Value>AD.master.rps|APP.master.rps</Value>
  </PackageAssignmentCondition>
</Conditions>
```

**The resulting behavior:** Only the first Value listed will be assigned to; all other Values after the pipe delimiter | are ignored.

```
PS C:\packages> (Get-RpsTargetItem -Name ad.master.rps -type virtualmachine).GetResourceAssignments('package') | ft resourceitem
ResourceItem
-----
Package - AdobeReaderDC/19.12.20034
Package - Firefox/70.0.0
Package - opera/70.0.0
Package - windows8.1-kb4519990-x64/2019.10.8
Package - x64-Windows8_1-KB4486105-x64/4486105.0.0

PS C:\packages> (Get-RpsTargetItem -Name app.master.rps -type virtualmachine).GetResourceAssignments('package') | ft resourceitem
ResourceItem
-----
Package - AdobeReaderDC/19.12.20034
Package - Firefox/70.0.0
Package - windows8.1-kb4519990-x64/2019.10.8
Package - x64-Windows8_1-KB4486105-x64/4486105.0.0
```

In this particular example, AD.master.rps is assigned the opera Package, because it was listed before the pipe delimiter |. APP.master.rps is not assigned the opera Package, because it was listed after the pipe delimiter |.

- o **Current Workaround for pipe delimiter |** : Utilize the Match Operator `<Operator>Match</Operator>`, with each value in the Value field wrapped in parentheses `()` and with a trailing question mark `?` . Example:

```
<Conditions>
  <PackageAssignmentCondition>
    <Property>ComputerName</Property>
    <Operator>Match</Operator>
    <Value>(NFA)?(WNM)?(WNMA)?</Value>
  </PackageAssignmentCondition>
</Conditions>
```

In this particular example, a Target with a Property of ComputerName will be assigned if its Value contains NFA, WNM, **and/or** WNMA. This implementation only requires a **partial** Value match.

For an **exact** Value match, the full string in the Value field must be enclosed with a caret `^` and a dollar sign `$` . Example:

```
<Conditions>
  <PackageAssignmentCondition>
    <Property>ComputerName</Property>
    <Operator>Match</Operator>
    <Value>^(NFA)?(WNM)?(WNMA)?$</Value>
  </PackageAssignmentCondition>
</Conditions>
```

In this particular example, a Target with a Property of ComputerName will be assigned if its Value contains NFA, WNM, **and** WNMA.

- Making changes to child node prevents properties from being visible from ancestor nodes when in session **Error Details:** The following PowerShell example shows how making changes to a child node fails to display properties from ancestor nodes (e.g. parent node):

```
$parent = New-RpsNode -Name parent -hostname parent -IPAddress parent
$child = New-RpsNode -Name child -HostName child -IPAddress child -ParentNodeId $parent.Id
$child.Property1 = 'value1'
$child.Properties # This will show Property1
$child.Update() # Calling the Update method will commit the property changes but they still won't be visible on the parent object
$parent.ChildNodes[0].Properties # This will show the child node without Property1
```

```
PS C:\> Exit-RpsSession
[08:06:15 INF] Exited session from DESKTOP-DN8MNHQ
PS C:\> Enter-RpsSession
[08:06:16 INF] Entering session from DESKTOP-DN8MNHQ
PS C:\> $gp = New-RpsNode -Name grandparent -Hostname grandparent -IPAddress grandparent
PS C:\> $p = New-RpsNode -Name parent -Hostname parent -IPAddress parent -ParentNodeId $gp.Id
PS C:\> $p.Property1 = 'value1'
PS C:\> $p | Select-Object -Property ParentNode, Name, Properties

ParentNode Name Properties
-----
grandparent parent {[Property1, value1]}

PS C:\> $gp.ChildNodes[0] | Select-Object -Property ParentNode, Name, Properties

ParentNode Name Properties
-----
grandparent parent {}
```

#### NOTE

The `.Update()` API method (in 3.1; not available in 4.x) and `Update-RpsNode` (in 3.1; not available in 4.x) have no effect.

**Current Workaround for displaying child node properties at parent node level:** After making changes to any node

that has a Parent Node use the following PowerShell command to fix the issue:

```
PowerShell
$parent.AddChildNode($child)
!["Workaround Fix Example"](..\..\..\Images\v3.1.0/ChildParentWorkaroundFix.png)
```

### NOTE

This method works regardless of the ancestry depth. Re-adding a grandchild to its parent makes the properties visible when accessed from the parent and the grandparent.

- 2GB RPS Package size limitation

The maximum supported RPS Package size is 2GB. Any RPS Package zip file that is larger than 2GB will throw an exception when RPS tries to open the package and read the manifest file from the package zip file.

- This exception can occur in two scenarios:

- When creating a new package stream with a package where the zip file size is greater than 2GB.
- When adding a new package to an existing package stream where the package zip file size is greater than 2GB.

#### The resulting behavior:

```
Mode                LastWriteTime         Length Name
----                -
-a-----          5/21/2021  10:15 AM      2147812265 2gb.zip

PS C:\cdn> New-RpsPackageStream -Path C:\CDN -name 2gb_
New-RpsPackageStream : The archive entry was compressed using an unsupported compression method.
At line:1 char:1
+ New-RpsPackageStream -Path C:\CDN -name 2gb
+ ~~~~~
+ CategoryInfo          : NotSpecified: (:) [New-RpsPackageStream], InvalidDataException
+ FullyQualifiedErrorId : System.IO.InvalidDataException,Rps.PowerShell.NewPackageStream
```

Figure: Example of the error encountered when an RPS Package zip file greater than 2GB is used.

Released on September 20, 2019

## What's new in 3.0.3 (Sep 20)

The primary update in this Hotfix release is to address:

- [#23726](#) Fix: Provisioning Node App Server fails to configure DSC. Login failed for user.

Released on September 19, 2019

## What's new in 3.0.2 (Sep 19)

The following are work items completed in support of the 3Q19 Release and delivered in Hotfix 3.0.2. These fixes include Critical and High Risk Factor mitigations.

- [#23542](#) Fix: Address .NET 2.0 Vulnerabilities
- [#23543](#) Fix: Address .NET 3.0 Vulnerabilities

- [#23556](#) Fix: Address CVE-2017-8529 mitigation for Internet Explorer vulnerability
- [#23555](#) Fix: Address 'Memory Management\FeatureSettingsOverride' mitigations
- [#23547](#) Fix: Address Visual C++ 2008 SP1 Vulnerability
- [#23548](#) Fix: Address GPO setting "Hardened UNC Paths" (KB3000483)
- [#23544](#) Fix: Address .NET 3.5 Vulnerabilities
- [#23545](#) Fix: Address SQL Server 2012 SP4 Vulnerability (KB4057116)
- [#23550](#) Fix: Address SSL Version 2 and 3 Protocol Detection

### **⚠ IMPORTANT**

The ContentStore has been updated to include various "binary" patches, such as for SQL Server, and Microsoft .NET. Additionally, the 3Q19 **.vhdx / .iso** have been updated to include additional Windows patches. Please ensure the latest ContentStore and the 3Q19-2012R2-0919 from the Release are used.

## **What's new in 3.0.1 (Sep 05)**

- [#23286](#) Fix: Task Management Service will throw errors after running for a long time

## **What's new in 3.0.0 (Aug 23)**

- [#19833](#) Timestamp Logic for BITS
- [#23135](#) Certificates issued by RPSRoot do not have FQDN in the SAN
- [#22992](#) Test DCA deployment without a PFX certificate
- [#23147](#) Resource Group membership cannot be updated by subsequent node imports
- [#23230](#) RpsDomainJoin account doesnt get the correct permissions to add a computer to the domain that is prestaged
- [#23229](#) RpsProvisioning dns record is set to Interanl nic instead of 996 and 59 NIC
- [#23227](#) Web Config files are being overwritten by RPSGUI, RPSProvisioning, and TrustedElementRepository DSC Partial
- [#23093](#) xDFSR uses Domain Admin account
- [#23049](#) RVP configured with specific registry settings for compliance
- [#21370](#) Master-Controller fails to resume after service or machine restart
- [#23210](#) SQL SA account name conflict
- [#23026](#) Content Delivery Network Partial is missing a mandatory parameter

## **What's new in 3.0.0-beta (Aug 16)**

- [#22496](#) Update PSScriptAnalyzer to 1.18.1
- [#22311](#) When installing the content store to a directory other than c:/contentstore certificates are installed in the wrong path
- [#22432](#) Remove RVPS GUI files and install and powerstig from the release
- [#23035](#) RpsDomainJoin accounts are set to Create = False within RpsAccounts.csv file
- [#22647](#) Configure a new Packaging Repository and migrate our code out of Core.
- [#22684](#) Updates needed to the Ports and Protocols section of the RPS Install Guide.pdf
- [#21495](#) RPS currently does not have a way to continually re-publish DSC partials
- [#22537](#) Update OSS registrations and Third Party Notices file
- [#22913](#) Files located under the folder c:\ContentStore\Export are not encrypted (on the APP VM)
- [#22948](#) Failing resource on RVP - [xPackage]ACCM
- [#19973](#) Deploy PowerSTIG 3.3.0
- [#22541](#) Add a script resource RpsDomainController.ps1 to execute certutil.exe - installdefaulttemplates
- [#22243](#) Automate Axway Desktop Validator Enterprise
- [#22483](#) Need to update SkipRules for DSC PowerStig configuration
- [#22433](#) Access Database partial is assigned in colorless baseline data for RVP
- [#22683](#) RPS Install does not work per published installation directions

- [#22694](#) Export-NodeData Runbook variable \$TargetItem is not correctly referenced
- [#21970](#) Unable to export taskmap definitions with Export-RpsData
- [#22015](#) Update RPS logging during deployment to better characterize issues
- [#21971](#) Lot 7 NOSC NIPR RVP ActivClientAppInstall patch fails (RPS 2.4.5)
- [#22607](#) Failing resource - [xPackage]ActivClient71
- [#21560](#) DSC Partials should only require OSCore when necessary
- [#22549](#) Update DCA Assignments.psd1
- [#22557](#) Update source Certificate locations and update the Certificates.psd1 and CertificationAuthority partial.
- [#20605](#) TrustElementRootPath gets set to wrong path
- [#21458](#) APP and AD VMs do not have PowerStig configurations
- [#22246](#) Any website on the c:\ drive is a CAT II finding
- [#22248](#) RPSAdmin domain account password should be user configurable for APP and AD
- [#22417](#) Newly generated self-signed certificates sometimes not loaded into the CMDB
- [#22426](#) Import-NodeData fails on APP VM when importing node data
- [#22429](#) Duplicate Import-RPSNode Functions
- [#22436](#) OSCP website has request filters that need to be removed
- [#22449](#) RVP - CdnPath points to C\$ instead of share
- [#22458](#) Registry resource failing to add registry keys for TER authorization
- [#22593](#) Update to only install McAfee agent 5.5
- [#22594](#) RVP - CdnPath points to C\$ instead of share
- [#22598](#) Registry resource failing to add registry keys for TER authorization
- [#22670](#) DomainJoinAdmin gets access denied when joining RVP to the domain
- [#22677](#) Remove Install-MNRps.ps1 as it is no longer used.
- [#22682](#) RpsProvisioning folder path creation should not use the FQDN for folder name
- [#22691](#) Generated certificates are missing FQDN for subject name
- [#22743](#) RpsGUI not reaching desired state due to a certificate error
- [#22936](#) Existing WinRm settings on a target cause the set-winrm runbook to fail.
- [#23001](#) Missing SSL binding reg key in trust element repository partial
- [#23015](#) Provisioning node configuration has missing master key encryption role on several accounts
- [#23034](#) Copy-Baselmages references the wrong local account for credentials.
- [#22454](#) Failing resource on RVP - [AdcsOnlineResponder]OnlineResponder
- [#22464](#) OSCore New Computername Timing
- [#22666](#) Deploy the RPS 3.x codebase in Hyper-V
- [#22725](#) Install-Rps.ps1 does not update MN node target items' VhdTemplateFileName property
- [#22542](#) Replace \$DomainAdmin with \$CAServiceAccount in the CertificationAuthority.ps1 partial.
- [#22555](#) Inhibit and restart Tumbleweed service to the DesktopValidatorStandardAppInstall.ps1
- [#22587](#) Add the Certificate partial dependency to the CertificationAuthority partial.
- [#22945](#) Create a partial for the Exit Module
- [#23073](#) Update the CA Partial to use RPSadmin
- [#23074](#) DomainJoin resource fails on DCA
- [#23075](#) RVP needs to be a member of TPKI Writes AD Group

## What's New in 3.0.0-beta (Aug 9)

- [#22432](#) Remove RVPS GUI files and install and powerstig from the release
- [#22311](#) When installing the content store to a directory other than c:/contentstore certificates are installed in the wrong path
- [#22684](#) Updates needed to the Ports and Protocols section of the RPS Install Guide.pdf
- [#22483](#) Need to update SkipRules for DSC PowerStig configuration
- [#22433](#) Access Database partial is assigned in colorless baseline data for RVP
- [#22694](#) Export-NodeData Runbook variable \$TargetItem is not correctly referenced
- [#22549](#) Update DCA Assignments.psd1



- [#21458](#) APP and AD VMs do not have PowerStig configurations
- [#22670](#) DomainJoinAdmin gets access denied when joining RVP to the domain
- [#22429](#) Duplicate Import-RPSNode Functions
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- [#22594](#) RVP - CdnPath points to C\$ instead of share
- [#20605](#) TrustElementRootPath gets set to wrong path
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- [#22243](#) Automate Axway Desktop Validator Enterprise
- [#22015](#) Update RPS logging during deployment to better characterize issues
- [#21560](#) DSC Partial configurations should only require OSCore when necessary
- [#22555](#) Add inhibit and restart Tumbleweed service to the DesktopValidatorStandardAppInstall.ps1
- [#22587](#) Add the Certificate partial dependency to the CertificationAuthority partial.
- [#20407](#) Configure BITS/DFSR per node type

## Files excluded from the drop!

In order to improve the speed with which RPS artifacts can be integrated with other code repositories, the decision was made to exclude files from Core which required modification later in the integration process for Mission Network. These files and folders are below:

- DSC\Modules\NetworkingDSC\6.1.0.0\DSCResources\MSFT\_HostsFile\MSFT\_HostsFile.psm1
- DSC\Modules\MN\_OfficeDSC\
- DSC\Modules\MN\_SchemaExtensionDSC\
- DSC\Modules\MN\_xWinEventLog\
- DSC\Modules\WINT\_NetworkPolicyServer\
- Modules\MN-AnalyzerRules\
- Modules\MN-Automation\
- Modules\MN-ISO\
- Modules\MN-Rps-Api\
- Modules\MN-Ssh\
- Modules\MN-VMWare-Utilities\
- DSC\PartialConfigurations\ActivClientAppInstall.ps1
- DSC\PartialConfigurations\AdobeReaderAppInstall.ps1
- DSC\PartialConfigurations\AdSchemaExtension.ps1
- DSC\PartialConfigurations\ClientPki.ps1
- DSC\PartialConfigurations\DesktopValidatorStandardAppInstall.ps1
- DSC\PartialConfigurations\DoDInstallRootAppInstall.ps1
- DSC\PartialConfigurations\FirefoxAppInstall.ps1
- DSC\PartialConfigurations\Firewall.ps1
- DSC\PartialConfigurations\GpoWmiFilter.ps1
- DSC\PartialConfigurations\GroupPolicy.ps1

- DSC\PartialConfigurations\McAfeeHBSSAppInstall.ps1
- DSC\PartialConfigurations\MsftAppLocker.ps1
- DSC\PartialConfigurations\MsftDnsServer.ps1
- DSC\PartialConfigurations\NetBannerAppInstall.ps1
- DSC\PartialConfigurations\OcspResponder.ps1
- DSC\PartialConfigurations\Office2013AppInstall.ps1
- DSC\PartialConfigurations\OpenSSLAppInstall.ps1
- DSC\PartialConfigurations\OracleJDKAppInstall.ps1
- DSC\PartialConfigurations\OracleJREAppInstall.ps1
- DSC\PartialConfigurations\PuTTYAppInstall.ps1
- DSC\PartialConfigurations\RvpsGUI.ps1
- DSC\PartialConfigurations\SmartCardManager90MeterAppInstall.ps1
- DSC\PartialConfigurations\SoftphoneAppInstall.ps1
- DSC\PartialConfigurations\SolarWindsETAppInstall.ps1
- DSC\PartialConfigurations\TeraTermAppInstall.ps1
- DSC\PartialConfigurations\TigerVNCAppInstall.ps1
- DSC\PartialConfigurations\TrustElementRepository.ps1
- DSC\PartialConfigurations\VMWareClientIntegrationPlugInAppInstall.ps1
- DSC\PartialConfigurations\VMWareRemoteConsoleAppInstall.ps1
- DSC\PartialConfigurations\VMWareToolsAppInstall.ps1
- DSC\PartialConfigurations\VMWarevSphereClientAppInstall.ps1
- DSC\PartialConfigurations\VMWarevSpherevCLIAppInstall.ps1
- DSC\PartialConfigurations\WaveDesktopCommunicatorAppInstall.ps1
- Images\ESX\Grangeville.cfg
- iPXE Distro\
- Provisioning\Provisioning Vlan Address Space.csv
- Runbooks\Copy-Baselmages.ps1
- Runbooks\Get-TargetDhcpIPAddress.ps1
- Runbooks\Import-VMWareVirtualAppliance.ps1
- Runbooks\New-VMWareVirtualMachine.ps1
- Runbooks\Remove-VMWareVirtualMachine.ps1
- Setup\
- Utilities\

## What's New in 3.0

### PowerShell

This release contains the following PowerShell enhancements:

- Added Import-RpsInstanceDefinition and Export-RpsInstanceDefinition to Import/Export InstanceDefinitions as Json.
- Added Import-RpsDataMapping and Export-RpsDataMapping to Import/Export Data Mappings as Json.
- Added Import-RpsResourceItemJson and Export-RpsResourceItemJson to Import/Export Resource Items as Json.
- Added Set-RpsDataImportMapping to the API from Rps-DataMapping module.
- Added Set-RpsDataFilter to the API from Rps-DataMapping module.
- Added Set-RpsDataCondition to the API from Rps-DataMapping module.
- Added Set-RpsDataProperty to the API from Rps-DataMapping module.
- Added Set-RpsDataAssociation to the API from Rps-DataMapping module.
- Added Set-RpsMappingFilter to the API from Rps-DataMapping module.
- Added Set-RpsDataVariable to the API from Rps-DataMapping module.
- Added Set-RpsDataMapping to the API from Rps-DataMapping module.
- Added Set-RpsDataFile to the API from Rps-DataMapping module.

## Rps-Installer

This release contains the following Rps-Installer enhancements:

### DSC

This release contains the following DSC enhancements:

- MofStore location is now located within C:\ContentPath\DSC.
  - OutputPath parameter is no longer set on the node, or set statically.
  - Publish-DSCConfiguration now creates, and sets the OutputPath parameter for all assigned partials.
  - Removed Mandatory flag from OutputPath parameter on all partials.
  - Updated runbooks to pass OutputPath within calls to LCM functions.
  - Default value for LCM functions within the RPS-DSC module is now the present working directory for stand alone use.

### RPS API

This release contains the following API enhancements:

- Adding the following Type Property constants:
  - IsContentDistribution
  - IsSoftwareDistribution
  - IsColumnDisplay
- Updated the Set-RpsResourceType cmdlet to indicate if the Resource Type is for software or content distribution. The IsContentDistribution and IsSoftwareDistribution switches are mutually exclusive in the cmdlet, however, setting the IsSoftwareDistribution switch will also set the IsContentDistribution flag on the Resource Type.
- Updated the Set-RpsTypeProperty cmdlet to indicate if the Property Type can be used for Column Displays within the Admin UI.
- Updated the New-RpsResourceGroup cmdlet to allow for properties to be provided at creation
- Updated the Write-RpsLogItem cmdlet to write to the appropriate PS stream. Tokenization in MessageTemplate is also more forgiving.
- Added Json support for InstanceDefinitions and Data Mappings to help make creation and updating easier.
- Added Json support for Resource Items to have a readable and organized way of import/exporting resource items and sharing between nodes.
- When TaskMaps are included in an export, their TaskMapSteps are also exported by default
- Added an optional Certificate parameter for passing a certificate file (.cer) that will encrypt the resulting configuration file in the Exit-RpsSession and Export-RpsData cmdlets.
- Added optional Certificate and password parameters for passing certificate file (.pfx) and password that will be used to decrypt a configuration file in the Enter-RpsSession and Import-RpsData cmdlets.
- Added support to encrypt/decrypt export files during the install process.

### RPS Sync Service

This release contains the following Sync Service enhancements:

### RPS CDN

This release contains the following RPS Content Delivery Network (CDN) enhancements:

- DFS-R is used for communication between Region and Site nodes.

- BITS is still used for communication between Master and Region nodes.
- Due to DFS-R mesh networking, all files are replicated to all Region and Site nodes within a domain, regardless of assignment.
- Patches will still only be installed on assigned targets

## Admin UI

This release contains the following Admin UI enhancements:

- Replaced 'Patching' on the top menu bar with 'Distribution'
- Added dynamically created sections under distribution for Content Distribution and Software Distribution

## Resolved Issues

Top issues addressed in 3.0:

- Fixed issue where the SMA runbook service account was denied access to the MofStore after STIGs were applied
- Fixed issue where there was a credential conflict with the Windowsfeature Net-Framework-Core resource, between the RpsSMA, and RpsSQL partial.

## Known Issues

### SQL Server 2012

This release contains the following SQL enhancements:

- Microsoft SQL Server 2012 has been upgraded from Service Pack 2 (SP2) to SP4

### PowerShell

This release contains the following PowerShell enhancements:

- Added support to allow certificate store parameter to be passed from CMDB.
- Added support for additional certificate roles:
  - CAp7b
  - CertificationAuthorityPFX
  - CACertificateChain
  - Added Force switch for Set-RpsResourceItem, Set-RpsTargetItem, New-RpsResourceItem, New-RpsTargetItem, New-RpsResourceGroup, and New-RpsTargetGroup
- Removed module RPS-Credentials and functions:
  - Get-Credential
  - New-Credential
  - Get-ServiceAccount
    - Added data files for Users and Certificates. They can be found here 'Setup\Configuration\Data\RpsAccounts.csv' and here 'Setup\Configuration\Data\RpsCertificates.csv'. For both data files, if no password is provided in the password column, a password will be randomly generated per user/certificate.

### Rps-Credential

- New-RpsCredential was updated to allow generation of a password, with or without a provided password policy.

### Rps-Installer

- Import-RpsCredential was updated to allow generation of a password, with or without a provided password policy.
- MofStore location was changed from C:\Windows\Temp to C:\ContentStore\DSC

## DSC

This release contains the following DSC enhancements:

- Added Certification Authority Partial to install and configure a Certification Authority node.
- Domain Admins no longer joins machines to the domain.
- The RpsDomainJoin account now joins staged computer objects, within the Computers OU, to the domain using the minimum permissions required.
- ContentDeliveryNetwork partial updated to install DFS-R for Region and Site nodes
- Updated Dsc Modules to the following versions:

MODULE	CORE VERSION
AccessControlDsc	1.3.0.0
ComputerManagementDsc	6.2.0.0
PowerStig	3.1.0
xWebAdministration	2.5.0.0
ResourceControllerDSC	2.0.1

## RPS API

This release contains the following API enhancements:

- Updated the Set-RpsTargetItem and Update-RpsTargetItem cmdlets to not allow the altering of an existing Parent if it has already been set.
- Adding the following ResourceType constants:
  - CATemplate
  - OcspUriPath
  - CdpUriPath
  - AiaUriPath
  - RegistryItem
  - CrI
  - NPSPolicyMap
  - NPSCient
  - RegistryAccessEntry
  - RegistryAccessControlList
  - RegistryAccessRule
  - CertificationAuthority
- **BREAKING CHANGE:** TypeDefinitions are now enforced on Target Items. All required params will have to be set when creating the target item.
- Added Instance Definitions, which are pre-defined complex, default data for the purpose of quickly defining data but also codifying configuration data
- Added a User Profile context to the Rps API in order to provide and track the current user. This provides the foundation for a RBAC implementation.
- Added an optional method of export to provide the user with a plaintext XML file where protected properties are in the clear.
- Added an optional CertificateThumbprint parameter to the Enter-RpsSession, Exit-RpsSession, Export-RpsData, and Import-

RpsData cmdlets in order to encrypt/decrypt file exports and imports.

- Added Get-RpsPasswordPolicy cmdlet
- Added Set-RpsPasswordPolicy cmdlet
- Added New-RpsPassword cmdlet
- Added Update-MasterKey cmdlet
- Added Get-RpsProtectedProperty cmdlet.
- Added Instance Definition Nodes, which are pre-defined objects that can be used to create Nodes that are associated with Instance Definitions
- Added Set-RpsTargetType cmdlet.
- Added Set-RpsResourceType cmdlet.
- Added Set-RpsSubType cmdlet.
- Added Set-RpsChildType cmdlet.
- Added Set-RpsTypeProperty cmdlet.
- Added Set-RpsTypeRA cmdlet.
- Added Set-RpsTargetAction cmdlet.
- Added Set-RpsResourceGroupType cmdlet.
- Added Get-RpsCredential cmdlet.
- Added New-RpsCredential cmdlet.
- Added Get-UnixHash cmdlet
  
- Added Set-RpsTargetGroupType cmdlet.

Sample:

```
$secureResult = Get-RpsProtectedProperty -TargetItem $targetItem -Name $name
$secureResult = Get-RpsProtectedProperty -ResourceItem $resourceItem -Name $name
$secureResult = Get-RpsProtectedProperty -Node $node -Name $name
$secureResult = Get-RpsProtectedProperty -TaskMapAssignment $taskMapAssignment -Name $name
$secureResult = Get-RpsProtectedProperty -ResourceGroup $resourceGroup -Name $name
$secureResult = Get-RpsProtectedProperty -TargetGroup $targetGroup -Name $name

# parameter setup
$name = "property name"

# return variable to plain text
$plainText = ConvertFrom-SecureString $secureString
```

- Added Set-RpsProtectedProperty cmdlet.

Sample:

```
Set-RpsProtectedProperty -TargetItem $targetItem -Name $name -Value $securePwd
Set-RpsProtectedProperty -ResourceItem $resourceItem -Name $name -Value $securePwd
Set-RpsProtectedProperty -Node $node -Name $name -Value $securePwd
Set-RpsProtectedProperty -TaskMapAssignment $taskMapAssignment -Name $name -Value $securePwd
Set-RpsProtectedProperty -ResourceGroup $resourceGroup -Name $name -Value $securePwd
Set-RpsProtectedProperty -TargetGroup $targetGroup -Name $name -Value $securePwd

# parameter setup
$name = "property name"
$value = ConvertTo-SecureString "Value" -AsPlainText -Force
```

- Enhanced Set-RpsTargetItem and Set-RpsResourceItem cmdlets to accept protected properties from a hashtable using the SecureString type. Sample:

```
Set-RpsTargetItem -Name $name -Type $type -Properties @{ Protected = $secureString }
Set-RpsResourceItem -Name $name -Type $type -Properties @{ Protected = $secureString }
...
```

- Breaking Change: Marked New-RPSTaskMapStructure cmdlet as Obsolete.
- Modified the API to mask protected properties when they are returned to the console.
- Added New-RpsInstanceDefinition Cmdlet. Sample:

```
$hs = @{
  Prop1 = "value1"
  Prop2 = "value2"
}
New-RpsInstanceDefinition -Name testName -Properties $hs
```

- Added New-RpsInstanceDefinitionItem Cmdlet. Sample: An Instance Definition Item is a wrapper for an RPS type and associated Properties.

```
PowerShell New-RpsInstanceDefinitionItem -EntityName testEntityName -Name name2 -Properties @{Prop1 = "Value1"} -
TypeDefinitionId $typedefinition.id
```

- Added Invoke-RpsInstanceDefinition Cmdlet.

```
PowerShell Invoke-RpsInstanceDefItem -Settings $resourceItem -InstanceDef $instanceDefinition
```

- Added Set-RpsInstanceDefinition Cmdlet. Sample:

```
Set-RpsInstanceDefinition -Name $Name1
Set-RpsInstanceDefinition -Name $Name1 -Properties @{Prop1 = "Value1"}
```

Added Remove-RpsInstanceDefinitionItem Cmdlet.

```
Remove-RpsInstanceDefinitionItem -Id "8825A09C-CCE3-4BB0-BCE1-03B4729AC423"
Remove-RpsInstanceDefinitionItem -InstanceDefinitionItem $InstanceDefinitionItem
```

- Added Get-RpsInstanceDefinition Cmdlet. Sample:

```
Get-RpsInstanceDefinition -Id "8825A09C-CCE3-4BB0-BCE1-03B4729AC423"
Get-RpsInstanceDefinition -Name MyInstanceDef
```

- Added Remove-RpsInstanceDefinition Cmdlet. Sample:

```
Remove-RpsInstanceDefinition -Id "8825A09C-CCE3-4BB0-BCE1-03B4729AC423"
Remove-RpsInstanceDefinition -InstanceDefinition $InstanceDefinition
```

- Added Set-RpsInstanceDefinitionItem Cmdlet. Sample:

```
Set-RpsInstanceDefinitionItem -Name $Name1 -TypeDefinitionId $id -EntityName $entityName
Set-RpsInstanceDefinitionItem -Name $Name1 -TypeDefinitionId $id -Properties @{Prop1 = "Value1"} -EntityName $entityName
```

- Added Get-RpsInstanceDefinitionReference. Sample:

```
$instanceDef = Get-RpsInstanceDefinition -Name "MyDefinition"
$instanceDefItem = Get-RpsInstanceDefinitionItem -Name "MyItem"
$reference = Get-RpsInstanceDefinitionReference -Name "name" -InstanceDefinition $instanceDef -InstanceDefinitionItem
$instanceDefItem
```

- Added New-RpsInstanceDefinitionReference. Sample:

```
$instanceDef = Get-RpsInstanceDefinition -Name "MyDefinition"
$instanceDefItem = Get-RpsInstanceDefinitionItem -Name "MyItem"
$taskMapIDs = "5b8b0340-091f-4823-b2f9-de937b5b4114", "a83b5445-3cc0-433e-b5e0-0fcf70389988"
$reference = New-RpsInstanceDefinitionReference -Name "name" -InstanceDefinition $instanceDef -InstanceDefinitionItem
$instanceDefItem -TaskMapIDs $taskMapIDs
```

- Added Remove-RpsInstanceDefinitionReference. Sample:

```
$InstanceDef = Get-RpsInstanceDefinition -Name "MyDefinition"  
$InstanceDefItem = Get-RpsInstanceDefinitionItem -Name "MyItem"  
Remove-RpsInstanceDefinitionReference -Name "name" -InstanceDefinition $InstanceDef -InstanceDefinitionItem $InstanceDefItem
```

- Added Remove-RpsInstanceDefinitionAssociation. Sample:

```
$InstanceDef = Get-RpsInstanceDefinition -Name "MyDefinition"  
$InstanceDefItem = Get-RpsInstanceDefinitionItem -Name "MyItem"  
$InstanceDefItem2 = Get-RpsInstanceDefinitionItem -Name "MyItem2"  
Remove-RpsInstanceDefinitionAssociation-InstanceDefinition $InstanceDef -PrimaryReference $InstanceDefItem -  
Secondaryreference $InstanceDefItem2
```

- Added New-RpsInstanceDefinitionAssociation. Sample:

```
$InstanceDef = Get-RpsInstanceDefinition -Name "MyDefinition"  
$InstanceDefItem = Get-RpsInstanceDefinitionItem -Name "MyItem"  
$InstanceDefItem2 = Get-RpsInstanceDefinitionItem -Name "MyItem2"  
New-RpsInstanceDefinitionAssociation-InstanceDefinition $InstanceDef -PrimaryReference $InstanceDefItem -  
Secondaryreference $InstanceDefItem2
```

- Added Get-RpsInstanceDefinitionAssociation. Sample:

```
$InstanceDef = Get-RpsInstanceDefinition -Name "MyDefinition"  
$InstanceDefItem = Get-RpsInstanceDefinitionItem -Name "MyItem"  
$InstanceDefItem2 = Get-RpsInstanceDefinitionItem -Name "MyItem2"  
Get-RpsInstanceDefinitionAssociation-InstanceDefinition $InstanceDef -PrimaryReference $InstanceDefItem -  
Secondaryreference $InstanceDefItem2
```

- Added New-InstanceDefinitionNode. Sample:

```
New-RpsInstanceDefinitionNode -EntityName testEntityName -Name name2 -Hostname hostname -IPAddress 1.1.1.1 -  
SyncEndpointUrl syncEndpoint -certificateThumbprint certThumbprint -pollingInterval 1
```

- Added Set-InstanceDefinitionNode. Sample:

```
PowerShell Set-RpsInstanceDefinitionNode -Name name1 -EntityName testEntityName2 -Hostname hostname2 -IPAddress 2.2.2.2 -  
SyncEndpointUrl syncEndpoint2 -certificateThumbprint certThumbprint2 -pollingInterval 2
```

- Added Get-InstanceDefinitionNode. Sample: `PowerShell $InstanceDefNode = Get-RpsInstanceDefinitionNode -Name name1`

- Added Remove-InstanceDefinitionNode. Sample:

```
PowerShell Remove-RpsInstanceDefinitionNode -Id "8825A09C-CCE3-4BB0-BCE1-03B4729AC423" Remove-  
RpsInstanceDefinitionNode -InstanceDefDefinitionNode $InstanceDefinitionNode
```

- Updated demo data scaffolding to support DCA image testing.
  - Added NOP79190 node to Nodes.psd1 to support DCA image testing.
  - Added NOP79190 target item to TargetItems folder to support DCA testing.
  - Updated Assignments.psd1, ResourceGroups.psd1, and Initialize-Image.ps1 to support DCA image testing.
- Updated demo data scaffolding to support NDM image testing.
  - Updated TCN79192 demo data scaffolding to support NDM image testing.
  - Added TCN79192 node to Nodes.psd1 to support NDM testing.
  - Added TCN79192 target item to TargetItems folder to support NDM testing.
  - Updated Assignments.psd1, ResourceGroups.psd1, and Initialize-Image.ps1 for NDM image testing.
- Modified Initialize-Baseline.ps1 to support dynamic testing of images.
- Updated PartialConfigurations-cmdb.tests.ps1 to support dynamic testing of images. Now includes the DCA and NDM image.



## Admin UI

- Added Generate Random Password functionality for Resource Item, Target Item, and Patch Password fields.
- Added the ability for Generate Random Password to be based on a Password Policy.
- Modified the UI to mask protected properties.
- Added password/protected property reveal functionality to the UI.
- Added the ability to supply a certificate thumbprint for encrypting/decrypting CMDB file export/import via the UI.
- Updated the Task Map Step Number and Depends On columns, so it has a consistent sort order.

## Resolved Issues

Top issues addressed in 3.0:

- Fixed issue in the the RPS Install that was causing DSC to fail on Node Registration and import.
- Fixed issue with SID translation that would force manual intervention.
- Fixed issue where user rights assignment settings within the core repo were conflicting when STIGs were applied.

## Known Issues

## Issues Addressed in RPS release 2.4.6

- [#21479](#) LCM Configuration Mode is not controllable per target from the CMDB
- [#21445](#) Missing utilities folder in local content store
- [#21422](#) RpsProvisioning cannot configure virtual drive
- [#21557](#) Rps-encryption breaking SAN's
- [#21558](#) Rps-Network doesnt allow existing exclusion assignments
- [#21559](#) RpsDomainController only applies tombstone lifetime to primary dc
- [#20900](#) 2Q19 User Principal Name suffix isn't being configured on DSC VM or AD.rps.local
- [#21469](#) Access Database partial is assigned in colorless baseline data for RVP
- [#21483](#) Remove RVPS GUI files and install and powerstig from the release
- [#21538](#) Prov Vlan updates from GDMS
- [#21539](#) TaskMap Updates from GDMS
- [#21566](#) Runbook retries implemented where network communications can be a factor
- [#21536](#) GPO Updates to UnifiedAD
- [#20788](#) Duplicate Import-RPSNode Functions
- [#21472](#) OSCP website has request filters that need to be removed
- [#20670](#) PowerSTIG Service rules fail if the expected service does not exist

## Issues Addressed in RPS release 2.4.5

- [#21275](#) Cannot add patches to a target and republish
- [#21396](#) RVP computer account on Dev node deployment not added to correct OU
- [#21371](#) OsCore does not create a Disk resource for targets with multiple disks
- [#20952](#) 2Q19 Update to only install McAfee agent 5.5
- [#21269](#) Publish-DSCPatch.ps1 pathing bug breaks Patching
- [#20951](#) 2Q19 Update VMware-tools-10.3.10-12406962
- [#16291](#) RVP - CdnPath points to C\$ instead of share
- [#20897](#) RVP missing ImagesParentPath property
- [#20867](#) New-ProvisioningNodeConfiguration.ps1 has incorrect property name images parent folder property
- [#20875](#) Unneeded array item causes a duplicate resource ID error during compilation
- [#20674](#) Failing resource on DSC - [xADForestProperties]

- [#20878](#) RpsSQL and RpsSMA resource controller has incorrect import version
- [#17860](#) On a running Prov Laptop APP VM, when a taskmap assignment and RunOnLocalNode has been issued, the first 3 workflows fail
- [#21354](#) Get-DSCStatus is not assigned to targets therefore patch status is not updated
- [#20897](#) RVP missing ImagesParentPath property
- [#20928](#) 2Q19 Utilities and Certificates not present in localContent Store Path
- [#20931](#) Created Dev Enclave/Node to reduce the complexity of deployments across teams
- [#20932](#) Remove hardcoded data from installer. Modify Hyper-V VM creation scripts to ensure VM environments are generated as specified
- [#20948](#) 2Q19 Update Adobe Reader to 19.012.20034
- [#20950](#) 2Q19 Update Java\jre-8u212-windows-x64.exe
- [#21395](#) Ocsponder partial is skipped on RVP due to missing property
- [#21383](#) RPSOSCore.ps1 network profile configuration can only set one interface to Private, otherwise there are resource conflicts
- [#21006](#) 2Q19 Certificate generation creates malformed SANs during import
- [#20928](#) 2Q19 Utilities and Certificates not present in localContent Store Path

## Issues Addressed in RPS release 2.4.4

- 19832 Copy-ContentStore does not log an alert when a file copy fails
- 19666 ResourceGroups.psd1 for the DSC missing items
- 20757 Adobe Acrobat version needs updated in partial
- 20559 Firewall Rules only allow traffic for specific applications
- 20603 GPO SIDs are not being translated into domain accounts when imported
- 20607 TrustElementRepository Reader/Writer sites have incorrect bindings
- 20690 Failing resource on RVP - [xPackage]McAfee Agent
- 19528 Test-DscMof does not detect resource conflicts between PowerStigConfiguration and other partials
- 20605 TrustElementRootPath gets set to wrong path
- 20611 Failing resource on RVP - [AdcsOnlineResponder]OnlineResponder
- 20776 RVP data has assigned partials that should not be assigned
- 19832 Copy-ContentStore does not log an alert when a file copy fails
- 19661 Set contentfreshness for sysvol replication on all domain controllers to 365 days maxtimeofflineindays setting
- 20604 Conflicting ComputerManagementDsc module versions
- 20821 SMA Runbook account needs to have LogonAsAService permissions
- 20607 TrustElementRepository Reader/Writer sites have incorrect bindings
- 19528 Test-DscMof does not detect resource conflicts between PowerStigConfiguration and other partials
- 20605 TrustElementRootPath gets set to wrong path
- Update to PowerSTIG 3.2.0
- STIG Rule Updates: 41023, 41024, 4102, 41026, 41407, 41021, 41022, 41027 41028, 41029, 41030, 41031, 41032, 41033, 41035, 41042 41305, 41306, 41307, 41037, V-41251, V-40950, V-69169 V-40952, V-40953, V-41016, V-41017

## Issues Addressed in RPS release 2.4.3

Released on May 15, 2019

- Removed dependency on xCAPStore resources
- Removed unneeded service restart in domain controller resource
- Updated Install-MNRps so execution can occur without \$VhdFolderPath and \$VMTemplateFileName
- Separated reader and writer SSL settings for the Trusted Element Reader website
- Fixed duplicate resources being created between PowerStig and RPS partials
- The \$allComputers variable in Rps-Installer module was not properly populated and resulted in unexpected deployment
- Fixed issues where DNS Zones were not loaded; the same fix addresses 'Domain Controller promotion fails due to unknown

root cause; possible SMB contention issue' and 'replica DC promo fails multiple connection issue'

- Added an array for value data on IPv6 disable resource
- Fixed Master-Controller failing to resume after service or machine restart
- Addressed xWebAdministration version references mismatch
- Added a reboot for ssl binding registry update to address Registry resource failing to add registry keys for TER
- Fixed inbound Reader and Writer traffic being blocked to the RVP
- Fixed the issue where PFX files were attempting to get uploaded to the TER site
- Removal of ResourceControllerDSC module version 1.3.1 and added ResourceControllerDSC module version 2.0.0.
- Updated version for import-module calls for ResourceControllerDSC
- Added use of ResourceController for Allow Log on Locally, and Log on as a Service URAs within RpsSync partial.
- Within the RpsSecLIS partial, added three resources that leverage ResourceControllerDSC to remove .NET v.4.5, and .NET v.4.5 Classic accounts from Log on as a service, Generate security audits, and replace a process level token before they become rogue/dead sids.
- COTS Update - McAfee
  - Agent 5.5.1.462
  - ACCM 3.2.5
  - RSD 5.0.6.125
  - SIEM Collector **new**
- COTS Update - ActivClient 7.1
- COTS Update - Adobe Reader 19.10.20091.53467

## Issues Addressed in Core release 2.4.2

Released on April 17, 2019

- Added and updated tombstone parameter
- Added forest name to domain object for laptop build
- User and Group property updates
- Add MC check to ensure only one MC is running
- Add max reserved memory for SQL
- Added RSAT for DNS
- Add tombstone configuration

## Issues Addressed in DSC\_Images tagged 2.4.2

- Changes made to partial to reflect the most current VMWare tools software
- Integrate PowerStig 3.1
- Bug fix to allow for duplicate name
- Add a forest name property to the ADDomain object
- Add valid task map action
- Updating the NT Auth store can fail - this breaks CAC login
- Updated NPS partial to use NPS group configuration from CMDB
- Update tombstone value on domain controller
- Added property for max memory

## Issues Addressed in 2.4.1

Released on April 2, 2019

- partial update for the gpomanagementdsc module update in DSC\_Images
- adding UPN Suffix to adobjects

- Update RpsDomainController.ps1
- disable ipv6
- Using Registry instead of xRegistry

## What's New in 2.4

Released on January 29, 2019

### PowerShell

This release contains the following PowerShell enhancements:

- The RPS Installer was updated to support complex task map execution in order to provide the ability to create ESXi, VMware, or Hyper-V based hosts and virtual machines.
- Added support for ESXi Host and virtual machine configurations.
- Improved Installer's ability to generate representative XML for RPS Import by reducing the number of switches required during the installation/configuration.
- Reorganized RPS PowerShell Modules into:

MODULE	DESCRIPTION
Rps-API	Core API functions
Rps-Credential	Create and access credentials in RPS CMDB
Rps-Dsc	Utility to help publish, manage and test RPS DSC Partials
Rps-Encryption	Manage certificates and encryption
Rps-Installer	RPS Configuration, Data Import and Installation helpers
Rps-IpSheet	Import networking information from an IPSheet Excel document
Rps-Network	Network Utilities
Rps-Snmp	Communicate with network switches
Rps-Types	Create and manage RPS Type Definitions
Rps-Utilities	Additional Utilities
Rps-Virtualization	Management of Virtualization

- Refactored New-HypervVirtualMachine to support additional configuration options. The new runbook is now called Set-HyperVVirtualMachine. Enhancements include support for the following:
  - Generation 1 virtual machines
  - Vhd disks
  - All virtual switch types (Internal, External, Private)
  - N number of disk/dvd drives and nics (Up to Hyper-V limitations)
  - Processor configuration
  - Static/Dynamic memory configuration

- o Image from .iso, differencing disk, existing disk
- o Virtual network adapter IP address configuration, including VLAN tagging

In order to take advantage of all these configurable options, the data must be representative of the configuration that is desired. Below is a representation of the relationship within the Rps type definitions:

OBJECT	RPS ENTITY TYPE	RPS TYPE	RPS SUBTYPE	PARENT OBJECT	ASSIGNMENT
Host	Resource/Target	Host	HyperV	N/A	VirtualMachine
Virtual Machine	Target	VirtualMachine	N/A	N/A	Host
Virtual NIC	Target	NIC	VirtualMachine	N/A	VirtualSwitch
VHD(X)	Target	Drive	Disk	VirtualMachine	N/A
Dvd	Target	Drive	DVD	VirtualMachine	N/A
Processor	Target	Processor	N/A	VirtualMachine	N/A
Virtual Switch	Resource	VirtualSwitch	HyperV	N/A	NIC

To see the configurable properties on each of these objects, please reference the Rps type definitions located at "ContentStore\Setup\Configuration\Import-RpsTypes.ps1".

Sample configurations are located at "ContentStore\Demos\Set-HyperVVirtualMachine".

## DSC

This release contains the following DSC enhancements:

- Added support for multi-step software installs to the Software Distribution Partial.
- Updated Runbook Guidance based on lessons learned from ESXi and SNE MVP.
- Added support for additional DHCP configuration options in the RpsDhcp partial such as:
  - o Scope option definitions
  - o Scope definitions
  - o Exclusion ranges
  - o Server bindings
- Updated Dsc Modules to the following versions:

MODULE	CORE VERSION
ComputerManagementDsc	6.0.0.0
ResourceControllerDSC	1.3.1.0
SqlServerDsc	12.1.0.0
xActiveDirectory	2.22.0.0
xHyper-V	3.13.0.0

MODULE	CORE VERSION
xWebAdministration	2.3.0.0

- Added support for PKI functionality to support DCA image with new DSC resource MN\_ActiveDirectoryCSDsc (Forked from ActiveDirectoryCSDsc 3.1.0.0). New resource include:
  - AdcsAiaExtension
  - AdcsCdpExtension
  - AdcsCertificateTemplate
  - AdcsImportCrl
  - AdcsInstallCertificate
  - AdcsOcspExtension
  - AdcsPublishCert
  - AdcsPublishCrl
- Added support for GPO Management functionality to support NDM image with DSC resource MN\_GpoManagementDsc. New resource include:
  - GpSecurityFilter

## RPS API

This release contains the following API enhancements:

- Added support for structured logging during unattended RPS Installer executions.
- Updated the RPS API to optimize Target loading with several Task Map Assignments.
- Resource Items and Resource Assignments can now be retrieved by Role, which is a special property designated for tracking the purpose of a resource item or its relationship to a target item. The Role property can be placed on a Resource Item or the Resource Assignment and can hold multiple values separated by the `|` symbol. To get resource items that have a specific role or have an assignment with a specific role, use the `-MatchAssignmentRole` parameter.

Sample:

```
$clientAuthCerts = Get-RpsResourceItem -Type Certificate -Role "ClientAuth"
$localAdmins = Get-RpsResourceItem -TargetItem $computer -Type Credential -Role "LocalAdministrator" -MatchAssignmentRole
```

Sample:

In this example, a Credential (Resource) is assigned to a Computer (Target). The assignment is given a Role of "LocalAdministrator". We can retrieve the designated Local Administrator credential for the computer by using the `-Role` parameter.

```
# assign credential and set roles
$computer = Get-RpsTargetItem -Type "Computer" -Name "Win137"
$credential = Get-RpsResourceItem -Type "Credential" -Name "RpsAdministrator"
$assignedCredential = New-RpsResourceAssignment -TargetItem $computer -ResourceItem $credential
$assignedCredential.Role = "LocalAdministrator|RpsUser"
$assignedCredential.Update()

# retrieve the LocalAdmin credential for the computer
$localAdminAssignment = Get-RpsResourceAssignment -TargetItem $computer -Role "LocalAdministrator"
```

- Added the `-Scope` parameter on the `New-RpsTaskStep` cmdlet.

Sample:

```

New-RpsTaskItem -WorkflowName "Resolve-TargetMacAddress"
New-RpsTaskItem -WorkflowName "Wait-TargetReady"
New-RpsTaskItem -WorkflowName "Wait-TargetReady"
New-RpsTaskItem -WorkflowName "Copy-BaseImages"
New-RpsTaskItem -WorkflowName "New-VMWareVirtualMachine"
New-RpsTaskItem -WorkflowName "Resolve-TargetDhcpIPAddress"

# parameter setup
$baremetalConfig = @{ TargetItemType = "Computer"; Filters = @{ IsHypervisor = "False" } }
$esxConfig = @{ TargetItemType = "Computer"; Filters = @{ IsHypervisor = "True" } }
$vmConfig = @{ TargetItemType = "VirtualMachine"; Filters = @{ "IsAppliance" = "False" } }
$vmApplianceConfig = @{ TargetItemType = "VirtualMachine"; Filters = @{ "IsAppliance" = "True" } }
$rvpConfig = @{
    TargetItemType = "VirtualMachine";
    Filters = @{ "IsAppliance" = "False"; "Designation" = "RVP" }
}

# Task Map creation
$map = New-RpsTaskMap -Type "ProvisionSystemDemo" -Name "ProvisionSystemDemo"
$mapConfig = @{ TaskMap = $map; AllowMultipleTargets = $true; IsTargetRequired = $true }

# Adding steps to task map
$resolveMac = New-RpsTaskMapStep @mapConfig -RunbookName "Resolve-TargetMacAddress" -TargetItemType "Switch"
$waitBaremetal = New-RpsTaskMapStep @mapConfig -RunbookName "Wait-TargetReady" -TargetItemType "Computer"

$baremetalHV1 = New-RpsTaskMapStep -TaskMap $map -RunbookName "Copy-BaseImages" -Dependencies $waitBaremetal
@esxConfig
$baremetalVM1 = New-RpsTaskMapStep @mapConfig -RunbookName "New-VMWareVirtualMachine" -Dependencies
$baremetalHV1 @vmConfig

#Adding step with dependency
$baremetalVM2 = New-RpsTaskMapStep @mapConfig -RunbookName "Resolve-TargetDhcpIPAddress" @vmConfig -
Dependencies $baremetalVM1 -Scope Self

```

## Admin UI

This release contains the following Admin UI enhancements:

- Added LocalNode UI option on execution of Task Map Assignment.
- Defaulted Resource Assignment state to Ready where no approval action needs to take place.
- Calculated the file hash of an imported file on Import.
- Corrected Pending Task Individual Count.
- Removed the Pending Actions on targeting list views.
- Made the Active and Global flags display consistently throughout the UI.
- Replaced the Edit and Remove hyperlinks with command buttons on the TaskMap derail views.
- Updated the UI to optimize loading a Target Item's details when several Task Map Assignments exist.
- Combined Pending Tasks and Task Information sections into one Job section on the Target Details view.

## Resolved Issues

Top issues addressed in 2.4:

- Resource Groups fails to import when group references already exist.
- Provisioning Service returns a 500 error if a duplicate object is found.
- Calling Set-RpsResourceItem and/or Set-RpsTargetItem with null properties causes a null-reference exception.
- Set-RpsResourceItem does not update parent's state when adding children.
- Import TaskMap with non-default dependency when scope is ignored.
- IpSheet import fails due to missing Access Database Engine pre-requisite.
- Task Assignment History not saved while in Session.
- RPS Session failing to refresh deleted Task Assignments from Target Item.

- Pending Task Individual Count is incorrect in the Target Item Detail view.
- Modified the Wait-TargetReady runbook to support both PhysicalMachine and Computer Types.
- The Installer's -GenerateXmlOnly switch fails to generate usable file when -ConfigFilename specified.
- Added the ability for more than one process to access isolated storage at the same time.
- Exported data doesn't include the Task Map Assignment if assigned to Child Item.
- Task Map Step Dependency scope is not imported.
- Added a fix for Installer when Script fails to fully execute when not running elevated.
- Inception deployment fails with an HttpSetServiceConfiguration error.
- Import-RpsIpsheet on TestIpsheet takes too long.
- Encrypted Dsc partials fail to decrypt when a partial without a credential is applied first.

## Known Issues

- RPS Install isn't exporting Host Node info, causing DSC to fail on Node Registration and import.
- UserRightsAssignment Dsc resource can sometimes fail due to failure to translate SIDs. See [here](#) for more information on the details. You can see this error exposed in Dsc:

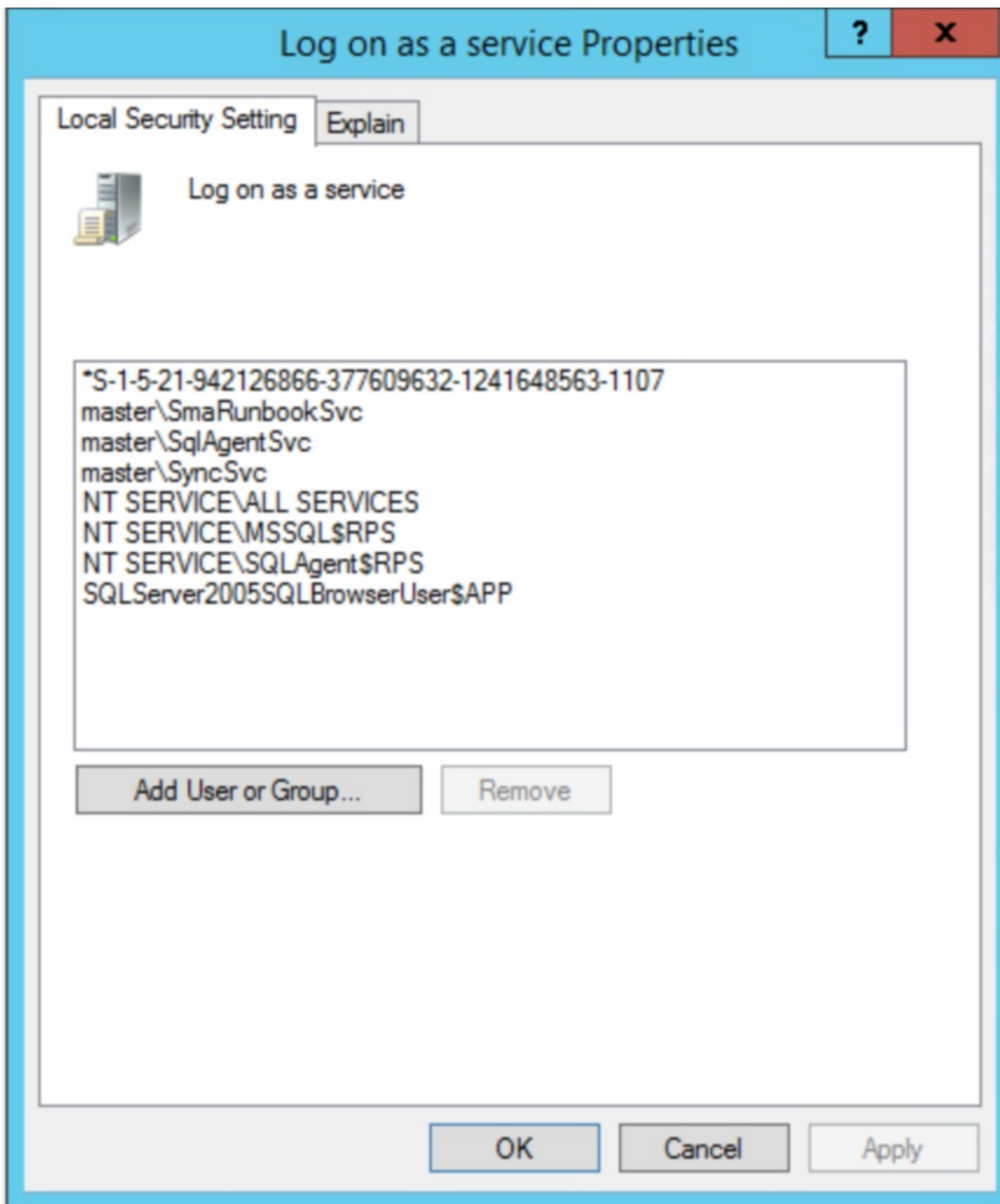
```

VERBOSE: [APP]: LCM: [ Start Test ] [[UserRightsAssignment]RpsSyncLogOnAsService]
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-271721585-897601226-2024613209-625570482-296978595 on Policy: Adjust_memory_quotas_for_a_process
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-3876422241-1344743610-1729199087-774402673-2621913236 on Policy: Adjust_memory_quotas_for_a_process
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-21-942126866-377609632-1241648563-1107 on Policy: Log_on_as_a_service
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-271721585-897601226-2024613209-625570482-296978595 on Policy: Replace_a_process_level_token
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-3876422241-1344743610-1729199087-774402673-2621913236 on Policy: Replace_a_process_level_token
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-271721585-897601226-2024613209-625570482-296978595 on Policy: Generate_security_audits
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-3876422241-1344743610-1729199087-774402673-2621913236 on Policy: Generate_security_audits
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Testing SyncSvc is present on
policy Log_on_as_a_service

```

A workaround for this is to open Secpol.msc and remove any untranslated SID's for the targeted user right:





## What's New in 2.3

Released on October 30, 2018

### PowerShell

This release contains the following PowerShell enhancements:

- Master-Controller now has the ability to run recurring tasks and scheduled tasks.
- The Get-DscStatus runbook will now by default run every two hours.
- Virtual disk file locations will use the Hyper-V default filepath when creating a virtual machine. You can also optionally specify an alternate location to store the vhd.

- ServerAdmin role created for all administrative functions required by Rps. It previously required the DomainAdmin role.
- Installer can dynamically generate self-signed certificates per deployment. It will use the configuration data supplied to populate their properties. Can also supply your own certificates. See the *Certificate Usage* document for details.
- Added the capability to suppress reboots for individual software installs.
- Reorganized RPS PowerShell Modules into:

MODULE	DESCRIPTION
Rps-Api	Core API functions
Rps-Credential	Create and access credentials in RPS CMDB
Rps-Dsc	Utility to help publish, manage and test RPS DSC Partials
Rps-Encryption	Manage certificates and encryption
Rps-Installer	RPS Configuration, Data Import and Installation helpers
Rps-IpSheet	Import networking information from an IPSheet Excel document
Rps-Snmp	Communicate with network switches
Rps-Types	Create and manage RPS Type Definitions
Rps-Utilities	Additional Utilities

## DSC

This release contains the following DSC enhancements:

- Created/Updated DSC Partial Configurations to support cross-forest configurations, Provisioning Service, CDN Service
- Updated Dsc Modules to the following versions:

MODULE	CORE VERSION
AccessControlDsc	1.1.0.0
CertificateDsc	4.4.0.0
ComputerManagementDsc	5.2.0.0
NetworkingDsc	6.1.0.0
SecurityPolicyDsc	2.4.0.0
SqlServerDsc	11.4.0.0
xActiveDirectory	2.21.0.0
xDatabase	1.9.0.0
xDhcpServer	2.0.0.0

MODULE	CORE VERSION
xDnsServer	1.11.0.0
xPSDesiredStateConfiguration	8.3.0.0
xSmbShare	2.1.0.0
xWebAdministration	2.2.0.0
xWindowsUpdate	2.7.0.0

## RPS API

This release contains the following API enhancements:

- The Task assignment restrictions were relaxed so that a Task Map can be assigned to non-root Target items. The New-RpsTaskAssignment Cmdlet previously restricted an assignment to only root-level target items. However, the restriction is no longer applicable within vehicle provisioning scenarios, where the vehicle is the root, DCEs are child items and virtual machines are grandchildren targets.
- Updated the Task Map Dependency scope to allow defining dependencies scoped to "all" (target), "self", and "parent". This provides the capability to have DCE1 tasks run parallel to DCE2 tasks, given that the DCEs are both children of a SNE parent.
- Simplified Task Map creation by creating the New-RpsTaskMapStep Cmdlet. The Cmdlet may accept a runbook name parameter instead of "TaskItem", essentially eliminating the need for using the existing Task Map structure. In addition, the New-RpsTaskMapStep Cmdlet will accept filters and dependencies inline.
- The New-TaskMapDefinition, New-TaskMapDefFilter, and New-TaskMapDefDependency Cmdlets are marked as obsolete and have been replaced by the New-RpsTaskMapStep, New-RpsTaskMapStepFilter, and New-RpsTaskMapStepDependency Cmdlets respectively.

Sample:

```

# Create target items
$sne1 = New-RpsTargetItem -Type Vehicle -Name SNE1
$switch1 = New-RpsTargetItem -Type Switch -Name "Cisco Switch" -ParentItem $sne1
$dce1 = New-RpsTargetItem -Type DCE -Name "DCE 1" -ParentItem $sne1
$dce2 = New-RpsTargetItem -Type DCE -Name "DCE 2" -ParentItem $sne1
$dce3 = New-RpsTargetItem -Type DCE -Name "DCE 3" -ParentItem $sne1
$rvpVM = New-RpsTargetItem -Type VM -Name "RVP" -ParentItem $dce2

# Create tasks
$task1 = New-RpsTaskItem -WorkflowName "Wait-Switch"
$task2 = New-RpsTaskItem -WorkflowName "Wait-DCE"
$task3 = New-RpsTaskItem -WorkflowName "Set-DCEConfig"
$task4 = New-RpsTaskItem -WorkflowName "New-ESXVM"
$task5 = New-RpsTaskItem -WorkflowName "Publish-Dsc"

# Create task map
$map = New-RpsTaskMap -Type "Provision-Vehicle" -Name "Provision-SNE"
$step1 = New-RpsTaskMapStep -TaskMap $map -TaskItem $task1 -TargetItemType Switch
$step2 = New-RpsTaskMapStep -TaskMap $map -TaskItem $task2 -TargetItemType DCE -Dependencies $step1
$step3 = New-RpsTaskMapStep -TaskMap $map -TaskItem $task3 -TargetItemType DCE
New-RpsTaskMapStepDependency -PreviousStep $step2 -Step $step3 -Scope Self
$step4 = New-RpsTaskMapStep -TaskMap $map -TaskItem $task4 -TargetItemType VM
New-RpsTaskMapStepDependency -PreviousStep $step3 -Step $step4 -Scope Parent
$step5 = New-RpsTaskMapStep -TaskMap $map -TaskItem $task5 -TargetItemType VM
New-RpsTaskMapStepDependency -PreviousStep $step4 -Step $step5 -Scope Self

# Assign map
New-RpsTaskAssignment -TaskMap $map -TargetItem $sne1

```

Sample: Inline filters and dependencies

```

$byFilter = New-RpsTaskMapStep -TaskMap $map -Filters @{ Type = "VirtualMachine"; IsDsc = $true }
$withDependencies = New-RpsTaskMapStep -TaskMap $map -Dependencies @( $step1, $step2 )
$byRunbookName = New-RpsTaskMapStep -TaskMap $map -RunbookName "Publish-Dsc"

```

- Added the ability to nest Resource Groups in order to enable RPS to model many complex scenarios such as AD Security groups.

Sample:

```

# Define a new Type Definition with the IsGroupReference flag
Set-RpsResourceType -Name "ADGroup" -IsRoot -IsGroupReference

# Create AD Groups
$ADDomainUsersGroup = New-RpsResourceGroup -Type "ADGroup" -Name "All Domain Users"
$ADAdminGroup = New-RpsResourceGroup -Type "ADGroup" -Name "Domain Admins"
$ADDNSAdminGroup = New-RpsResourceGroup -Type "ADGroup" -Name "DNS Admins"
$ADDirectorsGroup = New-RpsResourceGroup -Type "ADGroup" -Name "Directors"

# Create AD Users and assign them to groups
$AdUser1 = New-RpsResourceItem -Type "AdUser" -Name "AdUser1" -ResourceGroup $ADDomainUsersGroup -IsGlobal $true
$AdUser2 = New-RpsResourceItem -Type "AdUser" -Name "AdUser2" -ResourceGroup $ADAdminGroup -IsGlobal $true
$AdUser3 = New-RpsResourceItem -Type "AdUser" -Name "AdUser3" -ResourceGroup $ADAdminGroup -IsGlobal $true
$AdUser4 = New-RpsResourceItem -Type "AdUser" -Name "AdUser4" -ResourceGroup $ADDNSAdminGroup -IsGlobal $true
$AdUser5 = New-RpsResourceItem -Type "AdUser" -Name "AdUser5" -ResourceGroup $ADDirectorsGroup -IsGlobal $true
$AdUser6 = New-RpsResourceItem -Type "AdUser" -Name "AdUser6" -ResourceGroup $ADDirectorsGroup -IsGlobal $true

# Add AdUser3 to the AD Directors Group as well
$ADDirectorsGroup.AddChildItem($AdUser3)
$ADDirectorsGroup.Update()

# Get Group references
$ADAdminGroupRef = Get-RpsResourceItem -Id $ADAdminGroup.Id
$ADDNSAdminGroupRef = Get-RpsResourceItem -Id $ADDNSAdminGroup.Id
$ADDirectorsGroupRef = Get-RpsResourceItem -Id $ADDirectorsGroup.Id

# Assign Group references to All Domain Users Group
$ADDomainUsersGroup.AddChildItem($ADAdminGroupRef)
$ADDomainUsersGroup.AddChildItem($ADDNSAdminGroupRef)
$ADDomainUsersGroup.AddChildItem($ADDirectorsGroupRef)
$ADDomainUsersGroup.Update()

```

- Find-Rps\* Cmdlets have been deprecated and renamed to Get-Rps\* with the same functionality. The original Find cmdlets have been retained and marked obsolete. However, they will be removed in a future release.
- Added new Set-RpsTargetItem and Set-RpsResourceItem Cmdlets. Both Target and Resource Items can be created and edited via their respective Set-RpsTargetItem and Set-RpsResourceItem Cmdlets.

Sample: Create a new target item via Set-RpsTargetItem

```
$computer = Set-RpsTargetItem -Type "Computer" -Name "Win137" -ParentItem $serverRack
```

Sample: Update an existing target item via Set-RpsTargetItem

```
$computer = Set-RpsTargetItem -Type "Computer" -Name "Win137" -IsActive $false
```

Sample: Create a new resource item via Set-RpsResourceItem

```
$resourceItem = Set-RpsResourceItem -Type "type" -Name "name"
```

Sample: Update an existing resource item via Set-RpsResourceItem

```
$resourceItem = Set-RpsResourceItem -Type "type" -Name "name" -IsActive $false
```

- Updated the Target Type Definitions to include a child type for Actions. Actions link a Target of a certain type to a TaskMap. This allows a user to easily determine the status of an Action via the Admin UI.
- Added support for the retrieval of Target items, Target groups, Resource items, and Resource groups via wildcard property filters. The Get-RpsTargetItem, Get-RpsTargetGroup, Get-RpsResourceItem, and Get-RpsResourceGroup Cmdlets will return target\resource items and target\resource groups respectively using the properties supplied. If no properties are supplied,

all items\groups will be returned. When using the -Filter Parameter, a \$null value may be passed as a wildcard.

Sample: Get target items by properties

```
$foundItem = Get-RpsTargetItem -Filter @{"MAC" = "00:11:22:33:44:55"}  
$foundAllItemsWithMACProperty = Get-RpsTargetItem -Filter @{"MAC" = $null}
```

- Modified the API to allow for duplicate Task Map assignments to be created. RPS prevented assigning a Task Map to the same Target item more than once. This restriction was a legacy component in order to prevent Task Maps from changing after they were assigned. However, many scenarios such as the patching and provisioning processes are required to be run multiple times. Allowing Task Maps to be run multiple times enables RPS to have a cleaner user interface, cleaner logic, and overall better response times.
- Added a new Get-RpsConstants Cmdlet that will return all the defined RPS constants.

Sample:

```
$rps = Get-RpsConstants
```

- Added Get-RpsInstanceDefinitionItem Cmdlet. Sample:

```
Get-RpsInstanceDefinitionItem -Id "8825A09C-CCE3-4BB0-BCE1-03B4729AC423"  
Get-RpsInstanceDefinitionItem -Name MyInstanceDefItem  
Get-RpsInstanceDefinitionItem -ResourceItem $resourceItem -Filter $filterHashtable
```

## Admin UI

This release contains the following Admin UI enhancements:

- Added the TaskMap dependency scope to the TaskMap detail page.
- Added the ability to navigate between nested Resource Groups within the user interface.
- Changed the user interface's default landing page to the local Node's detail page.
- Added a section to the Node's detail page to display the status of its child Target items.
- Added the display of associated Actions to the Target Item detail page. This allows a user to easily determine the status of an assigned TaskMap, such as "SNE Provisioning", and start the TaskMap if necessary via the Admin UI.
- The Folder detail page was modified to list the files contained within the CDN folder.
- Added bread crumbs to the user interface to simplify site navigation.
- Simplified the Target details page by modifying the view to present just the high-level processes that are running and to use drill-downs view to access the more detailed information.
- Added a new detail page for Task Map Assignment.
- Added a new detail page for Resource Assignment.
- Modified the Target Group page to allow for adding and removing Target items to and from a group.
- Added the ability to select from any Task Map or Task item when assigning a new task to a Target item.

## RPS Sync Service

This release contains the following Sync Service enhancements:

- Separated process of requesting changes and sending changes, so a child node will not block operations on a parent node.
- Queue received changes on all nodes, so changes won't be re-transferred on merge errors.
- Added Snapshot Isolation to transactions to avoid inconsistent data when gathering changes.
- Audit fields have been added to CMDB objects for use by Sync processes. These will be used by API in 2.4.

## RPS CDN

This release contains the following RPS Content Delivery Network (CDN) enhancements:

- CDN now uses Background Intelligent Transfer Service (BITS) to transfer files from Parent to Child CDN.

- CDN uses hierarchical topology, where child requests files from parent, instead of full mesh used by DFS-R.
- CDN includes a new Indexer Service which stores File and Folder information in the CMDB to reduce duplicate transfers.

## Baremetal Provisioning Service

The RPS Provisioning Service is an HTTP-based Web API hosted in IIS for use in brokering information from the RPS CMDB to a pre-execution environment such as iPXE for installation of a defined image and configuration. For instance, iPXE can be configured to "point to" the Provisioning Service which will return a boot script file for the MAC address requested.

This release contains the new Baremetal Provisioning Service with the following features:

- Return iPxe boot scripts from an http/https service based on matching devices in the CMDB.
- Host full images (such as .iso, .wim) in the service for download from iPxe.
- Host ESXi Kickstart scripts for ESXi configuration support.
- Support approval of base image through Resource Assignments in CMDB.
- Avoid boot looping through a configurable iPxe expiration period.

## Resolved Issues

Top issues addressed in 2.3:

- RPS objects were not consistently setting dates\times to UTC dates\times.
- The DependsOn attribute was not handling all options.
- In RpsSession, the TaskAssignment Cmdlets attempted to transact with the Database.
- Internet Explorer failed to display glyph icons when using custom Cache-Control.
- The RpsGui Partial throws an error when applying SSL Certificate.
- In Server 2012, the New-HyperVVirtualMachine Runbook fails to add NICs to new VirtualMachines.
- Remove-ItemProperty fails in RpsSession.
- Test-DSCConfiguration returns false on CMDB deployment even after dacpac is deployed.
- Property Bag missing support for deleting a property.
- Target Item to GetResourceGroups and Resource to GetTargetGroups returns duplicate groups if group contains multiple members.
- Duplicate node error upon entering previously saved RpsSession.
- Calling Install-Rps for a specific node fails to create a parent node.
- Sync property replication failure.
- Sql Encryption fails to apply correctly.

## Known Issues

- UserRightsAssignment Dsc resource can sometimes fail due to failure to translate SIDs. See [here](#) for more information on the details. You can see this error exposed in Dsc:

```

VERBOSE: [APP]: LCM: [ Start Test ] [[UserRightsAssignment]RpsSyncLogOnAsService]
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-271721585-897601226-2024613209-625570482-296978595 on Policy: Adjust_memory_quotas_for_a_process
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-3876422241-1344743610-1729199087-774402673-2621913236 on Policy: Adjust_memory_quotas_for_a_process
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-21-942126866-377609632-1241648563-1107 on Policy: Log_on_as_a_service
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-271721585-897601226-2024613209-625570482-296978595 on Policy: Replace_a_process_level_token
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-3876422241-1344743610-1729199087-774402673-2621913236 on Policy: Replace_a_process_level_token
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-271721585-897601226-2024613209-625570482-296978595 on Policy: Generate_security_audits
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Could not translate SID:
S-1-5-82-3876422241-1344743610-1729199087-774402673-2621913236 on Policy: Generate_security_audits
VERBOSE: [APP]: [[UserRightsAssignment]RpsSyncLogOnAsService] Testing SyncSvc is present on
policy Log_on_as_a_service

```

A workaround for this is to open Secpol.msc and remove any untranslated SID's for the targeted user right:

## Log on as a service Properties



Local Security Setting

Explain



Log on as a service

\*S-1-5-21-942126866-377609632-1241648563-1107  
master\SmaRunbookSvc  
master\SqlAgentSvc  
master\SyncSvc  
NT SERVICE\ALL SERVICES  
NT SERVICE\MSSQL\$RPS  
NT SERVICE\SQLAgent\$RPS  
SQLServer2005SQLBrowserUser\$APP

Add User or Group...

Remove

OK

Cancel

Apply