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List of typical implementation insights

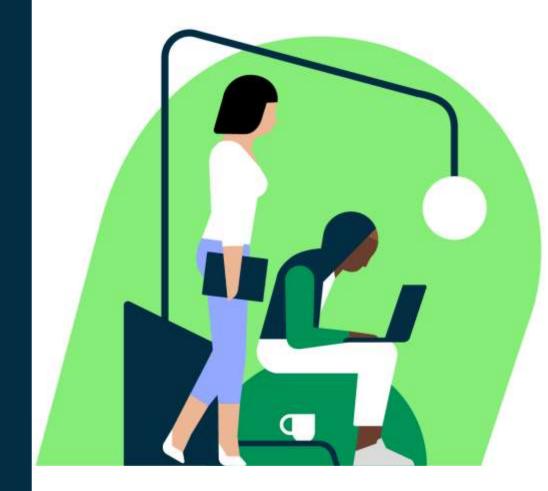| Section 1 – Technical insights	Section 2 – Non-technical insights
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Technical insights

Reconciliation failures on upgrade

Context description	Insight details / Steps to reproduce
Reconciliation fails in the suite engine if suites had been inferred for non-licensable installs	Customer upgrading from Madrid (or London) to New York (or higher) releases and are having non-licensable suite components configured in their software models.
Objective and Insight	• Run reconciliation and notice the reconciliation is failing.
Customers will experience reconciliation failure across products after the instance is upgraded from Madrid (or older) to New York (or later) releases when they have suite components configured for non-licensable products. Failure occurs when the Suite Engine consumes software installs whose inferred suite is populated but the inferred suite level is set to 0.	• Verify the logs to see the exception as per the description.

Remediation description	Remediation details / Remediation steps
Apply the workaround described in the Known Error Article	**Below is the script to fix the installs:**
Links to supporting documents/materials	`var install = new GlideMultipleUpdate('cmdb_sam_sw_install');`
	`install.addNotNullQuery('inferred_suite');`
	`install.addQuery('inferred_suite_level', '0');`
	`install.addNullQuery('norm_product');`
	`install.setValue('inferred_suite','');`
	`install.setValue('inferred_suite_level','');`
	`install.setValue('inferred_suite_product', '');`
	`install.setValue('inference_calculated', 'false');`
	`install.execute();`
• [KB0793233](KB0793233)	To see which installs the above script will update, apply the following criteria on the installs table
	• Go to installs list view (cmdb_sam_sw_install)
	• Add a filter with inferred suite is not empty, inferred suite level is 0 and Normalized Product is empty
	Once the script is executed and all installs are fixed, run reconciliation.

'SAM– Import User Subscription' job fails

Context description
Scheduled job 'SAM - Import User Subscriptions' fails with errors similar to "Unhandled exception for profile : <sys_id of profile> : SyntaxError: Unexpected token: R". The sys id refers to the profile in 'samp_sw_subscription_profile' table.

Objective and Insight
Importing user subscriptions for common SaaS products is necessary to do license reconciliation and cost management. Errors on importing this information hinders accurate reporting and necessitates manual reconciliation.

Insight details / Steps to reproduce
1. Login to the affected instance 2. Navigate >> Systems Definition >> Scheduled Jobs and select "SAM - Import User Subscriptions" and click Execute Now 3. Able to see that respective job fails in the table "Software Asset Job Results" (samp_job_logs). 4. In the Systems Logs should be able to find related error messages.

Remediation description
Apply the workaround described in the Known Error Article

Links to supporting documents/materials
• KB0814859

Remediation details / Remediation steps
Workaround: The changes were made to SampO365RestClient script include. Upload the attached script include to the affected instance. https://<instance-name>.service-now.com/nav_to.do?uri=sys_script_include.do?sys_id=22013fa28770030067b5ed4d87cb0bc9

Migrate SAM Foundation software installations

Context description	Insight details / Steps to reproduce
Customers who are using Discovery but have not used any SAMF, SAMP, or SAM plug-in yet must run a script to migrate software data in the CMDB into the appropriate SAM-related tables.	
Objective and Insight	• If you are using Discovery, you must run a script after installing Software Asset Management Foundation plugin to copy previously discovered software installation records from the [cmdb_ci_spkg] table to the [cmdb_sam_sw_install] table, which is used by Software Asset Management Foundation plugin to store software installation records.
If you are running Discovery or SCCM and have used a version of ITSM Software Asset Management previously, there is no need to run this script. When running the Migrate Software Installs script, allow enough time for the process to complete.	
Remediation description	**Remediation details / Remediation steps**
Use the path noted under 'Remediation details' on this slide.	
Links to supporting documents/materials	• Navigate to **Software Asset** > **Administration** > **Migrate Software Installs** and click **Procced**. The Software Installations list is shown. If the data has already been migrated, a message is shown.
• Docs page	

Publisher drop-down contains duplicates

Context description
Customers who are using Discovery but have not used SAMP yet must run a script to migrate software data in the CMDB into the appropriate SAM-related tables.

Objective and Insight
If you are running Discovery and have used a version of ITSM Software Asset Management previously, there is no need to run this script. When running the Migrate Software Installs script, allow enough time for the process to complete.

Insight details / Steps to reproduce
• If you are using Discovery, you must run a script after installing Software Asset Management Foundation plugin to copy previously discovered software installation records from the [cmdb_ci_spkg] table to the [cmdb_sam_sw_install] table, which is used by Software Asset Management Foundation plugin to store software installation records.

Remediation description
Use the path noted under 'Remediation details' on this slide.

Links to supporting documents/materials
• Docs page

Remediation details / Remediation steps
• Navigate to **Software Asset** > **Administration** > **Migrate Software Installs** and click **Procced**. The Software Installations list is shown. If the data has already been migrated, a message is shown.

Troubleshooting Software Asset Connections

Context description
Troubleshooting Software Asset Connections

Objective and Insight

Today we rely on ServiceNow's discovery product for the server software discovery and a ServiceNow built integration with Microsoft's SCCM for desktop or client software discovery. However, there are numerous other tools in the market like Tanium, ADDM etc. that can perform this discovery.

This new feature provides a generic framework using a common API end point that allows integration with any discovery toolset including specialized discovery of Oracle, Citrix and VMware products.

Remediation details / Remediation steps

1. In addition to the XML payload modifications and REST configurations, there is a system property which enables scheduled jobs. It must be enabled.

Enable scheduled jobs when using third party Datasource Integration Framework (?)
☑ Yes | No

2. Payload throwing 500 error
– No special characters are supported in the JSON payload. Please make sure character encoding is handled
– Customer has not configured the payload relations properly (Runs on relationship etc...)

3. Citrix Install record not created as expected
– Make sure device information is updated on (publisher app/ publisher desktop) table records

4. More than one install record found with same normalized values
– Make sure de-dup scheduled job is configured accordingly. Also check to see only 1 install will be active

5. Unable to find entries in the install table after calling REST endpoint with generic payload
– Customer running payload from wrong domain
– IRE stamps entries with User domain
– From parent domain configure form layout to show domain field to the stamped domain

6. Unknown relationship errors while running payload using IRE REST endpoint
– Review the IRE error messages

7. Unable to find the install record created by discovery source A when Multiple discovery sources (A, B) are enabled
– IRE API will overwrite the install record based on key criterion attribute (Discovery source is not a key criterion attribute)
– If an install is created by Discovery Source A, later if Discovery Source B also identified the same install and trying to populate the Install record using IRE would overwrite the existing install

Troubleshooting Overlapping Software Spend

Context description
Previously, customers could use Spend Detection to categorize various software spend transactions into categories. The next step is to consolidate their usage and reduce multiple licenses.

Objective and Insight
SAM allows a software manager to select the overlapping software products and create a demand in project portfolio management. This consolidation may require different actions to be performed such as reclaim existing licenses, blacklisting some of the products, purchasing more licenses for the approved product, etc.

Additionally, the software manager may also specify what action is to be performed against each of these selected products. |

Remediation details / Remediation steps

1. **I do not see Overlapping Software dashboard reports updated after I imported/updated spend transactions.**
– The Overlapping Software Summary data is populated through scheduled job, SAM - Spend-Populate Overlapping Software Summary. Once the scheduled job runs, the reports should reflect the updated spend transactions data.
– The job only runs if there are changes made to Software Spend Transactions (either in the form of insertion of new records, or updates on existing records) since the last run.

2. **I cannot edit Overlapping Software Configuration records shipped by ServiceNow.**
– Ensure the user has the roles sam_user and report_admin in non domain separated instance.
– In domain separated instance, ensure the user has the roles sam_user, report_admin and domain_admin.

3. **I do not see appropriate filters on the Overlapping Software reports shipped by ServiceNow.**
– Reports, are shown on Overlapping Software Summary.
– The filters present on the report itself are on Report configuration and Reporting version.
– The underlying filters to get the overlapping products within specific time period are present in the respective Report configuration record i.e., Overlapping Software Configuration record.

4. **I added a new Overlapping Software Configuration record and created a new report based on the configuration. But I do not see any data reflected in the report.**
– Ensure that the scheduled job, SAM - Spend-Populate Overlapping Software Summary ran after the configuration record is added.
– Ensure the job ran successfully by checking the result in Software Asset Job Asset record.
– Ensure that there are Software Spend Transaction records which satisfy the filters in the configuration record.

5. **How can I view logs and audit records?**
– Error log while running the scheduled job SAM - Spend-Populate Overlapping Software Summary is stored in the System Logs table.
– Progress of the scheduled job SAM - Spend-Populate Overlapping Software Summary is tracked by a log in Software Asset Job Results (samp_job_log).

Troubleshooting SSO Connections for SaaS License Management

Context description	Remediation details / Remediation steps
SAM Managers want to analyze usage data for all their SSO managed apps inside their SAM solution.	**1. SSO Integration capabilities will not be available if Azure AD plugin is not active** **2. "Please get OAuth token for this profile."** --> Click on "Connection & Credential" on the SSO Integration Profile form --> Click Credentials ---> Click "Get OAuth Token"

Objective and Insight

SAM Managers want to see Usage / Login data for all their SSO apps inside their SAM solution. This integration with Microsoft Azure AD will enable the customer to do the following:

- Access multiple applications with a single password
- Monitor user access to the applications
- Analyze usage information for each application at the user level
- Perform meaningful action on 'stale users' (insufficient number of logins)

3. If the "External Catalog ID" on the SSO Application is empty, then Software Model will not be created. Users can manually create a software model for that product and associate it to the SSO Application to pull usage information.

4. Reclamation
– If a user has direct access (app assignment is directly to the user), there is no issue with reclamation. We will revoke user access from Azure portal and delete user subscription.

– If a user has indirect access (app assignment is from a directory group), clicking on reclaim will show a message saying that user must be revoked manually from specific groups.

– If a user has both direct and indirect access, we will auto revoke direct access of that user, but user must be revoked manually from specific groups.

Troubleshooting Multi-tenant support for IT Asset Management

Context description
Manage entire IT Asset Management lifecycle for your customers in a shared ServiceNow instance.

Objective and Insight
IT Asset Management previously supported only one dedicated instance. Today, service providers can manage their customer data and processes within a shared instance. Likewise big enterprises with subsidiaries can also manage them independently within one instance. IT Asset Management includes – SAM, HAM, Procurement and Contract Management Apps.

Remediation details / Remediation steps

1. Reclamation candidates are not created
– If the reclamation rule is created in global domain, then a reclamation candidate will be created in the same domain as the installed software record associated to candidate
– If the install record was also in global, then candidate will be created in default domain. The domain of the record should be fixed by MSP.

2. Newly created core company in global is not visible
– When a user tries to create a custom product from global domain, say he also chooses to create a new core company, then expectation is it will be created in global. But there is specific logic to prevent creation of core company in global and hence it will be created in default domain.
– Since a new core company was created, if a new publisher is created, it will also be in the default domain
– Will have to fix the domain on both core company and publisher records

3. User picked wrong reference record from wrong domain which hides the information when not in the right domain
–We expect users to add the domain column to any reference looks ups to make the right decision on which records to be picked

KNOWN LIMITATIONS:
•**If any table is extending from task table, when records are created in global domain will be automatically set to default domain (through a BR)**
– MSP is expected to fix such records
•**Sys_number table is from platform and is not domain separated.** Any tables that used this table for auto-increment of numbers will have this table shared between domains
•**Publisher list on dashboards runs off of PA flag on publisher table.** The publishers PA flag will not be reset before the start of recon but will always be set for the publisher processed in the recon in all domains – if a domain user logs in, they would see publishers of diff domains as well in dashboard filter
– It could happen that a publisher has no recon results but is visible on the dashboard filter
•**Named user type in SAP integration is seeded data from plugin,** when SAP data is imported, it sets the NUT records flags is_discovered = true which were found in SAP.
– Limitation is this flag will be reflected in all domains. Since it doesn't affect any functionality, no changes made in this release, It will be revisited in next release.
– Same behavior is noticed with SAP Engine Measurements

Troubleshooting ITAM SAP Publisher Pack v3

Context description

Manage entire IT Asset Management lifecycle for your customers in a shared ServiceNow instance.

Objective and Insight

Avoid paying full price for non-compliance Engines. Many engines provide counting functions used by the SAP measurement program (USMM) to determine whether an engine is being used and how, and the results are included in the License Administration Workbench (LAW) report.

For example, SAP Payroll Processing uses the number of master records while SAP E-Recruiting uses the number of employees. Other metrics include the number of orders, contracts, patients, etc.

Each counting function returns one or more *measurements* which can subsequently be used to determine the total license consumption for an engine. SAP is one vendor that audits and penalizes customers for over usage of engine license measurements.

Support for engines in SAP license optimization solutions is limited; Tracking Usage of multiple engines in multiple SAP systems as well as Audit Engine license noncompliance usage. To be successful requires a product with engine capabilities and the expertise to guide you safely through the pitfalls.

Remediation details / Remediation steps

• **If SAP License Metric table is having only seed data**
– Check if content is pulled for table. If not, check next scheduled date for pull.
• **SAP License Metric Measurement table is empty?**
– Check 'Fetch engine usage' property value in configuration section of sap connection.
• **SAP License Metric Measurement records are not present for particular sap client?**
– Check 'fetch measurement' column value in sap connections. Set to "true". Also on SAP side, in RFC ALV program, select checkbox for allowing engine fetch from active RFC sap clients.
• **SAP engine software models are not getting created?**
– Check if the sap license metric in 'License Metric Measurement' table getting resolved by content data.
• **SAP Engine Usage records are not present for sap license metric and sap client?**
– Are sap client and sap license metric present for latest measurement date.
• **License workbench engine product is showing not compliant but all the software models available inside are complaint?**
 This is because of unlicensed engine records available in 'SAP Engine Usage' table.
• **In License workbench engine products which are without entitlement, Some are showing compliant and some are showing non-compliant?**
– Check if the SAP license metric is relevant/non-relevant, if the software model has a is_relevant flag set to false. Non-relevant engines are always considered as complaint.
– Check if the sap license metric is_relevant is turned on and the threshold provided on software model is above the Rights consumed by SAP engine, it will show compliant.
• **After activating automatic software model result creation property, still not seeing software model results for SAP Engine Products without entitlement.**
– For SAP engines, we don't create Software model Results if entitlements are not available (even if property is set to true)
• **For SAP engine, I have entered less rights then what I am consuming in SAP, still SAP engine product is displayed compliant.**
– Please check software model page. SAP engine is non-relevant or the consumption is less than threshold mentioned in SAP software model page of that particular SAP engine.
• **Where to check unlicensed engine records?**
– In License Workbench, we have new tab name 'Unlicensed Engine' to view the records.
• **SMR is compliant but we still see remediation option?**
– remediation option will be generated if rights consumed is greater than rights owned
– If SAP License metric is not relevant or has a threshold greater than rights consumed we mark affects compliance to false.

Troubleshooting Oracle Options/Packs Enhancements

Context description
In previous releases, Oracle DB Server and Option/Pack licenses were maintained on the single DB Server software model. This resulted in a lack of visibility to the compliance position for the DB options. If either the option or the DB Server was not compliant, the DB Server model was flagged as not compliant.

Objective and Insight
The new approach manages licensing for Oracle DB Server separately from Database options/packs using separate software models for DB Server and DB Options. Going forward, the DB Options compliance position will be reported separately from the DB Server and licenses for each DB Option will be managed on its own software model.

Remediation details / Remediation steps
1. Does this feature replace an older legacy feature? Yes To manage licensing for Oracle DB Server separately from Database options/packs, we have •Separated software models for DB Server and DB Options – database option field is added to Software Models •DB Options compliance position will be reported separately from the DB Server •Licenses for each DB Options will be managed on its own software model **2. Are there any schema changes that may impact customers' current use of the platform, data, customizations, or upgrade duration?** – Software Model has been added with database option field and the fix script 'SAMP-Create Oracle option software model' will fix software models during upgrade **3.List Upgrade Scripts especially resulting in any changes to data format or structure** – These Fix Scripts are run during the upgrade. •SAMP-Create Oracle option software model •SAMP-DB option for entitlement import •SAMP-Handle deletion of Oracle options from content table **4. Any special monitoring considerations after the upgrade?** – Confirm that the 3 fix scripts completed successfully. – Note that, after the successful upgrade the database option field on Software Entitlements will no longer be used and is hidden on the form. A fix script will move database option entitlements to the new design by creating database option Software Models. **5. Are the new features supported on an on-Prem instance? Yes** You need to enable the plugin "com.snc.samp.oracle".

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Troubleshooting ITAM Visual Studio Subscription License Management

Context description

Visual Studio is a platform used to develop computer programs, web applications and mobile apps. Subscriptions are managed using the Microsoft Volume Licensing Service Center (VLSC) All products in the Visual Studio Suite can be installed only in a development/test environment.

Objective and Insight

•The following scenarios are addressed in this feature:
– The ability to set-up a software model for the Visual Studio suite and define an entitlement for the Visual Studio Subscriptions

– Allocate the Visual Studio license to users

– The ability to restrict the usage of this software model to only development/test environments

– Reconcile usage of components of this suite with the entitlement defined using this software model

– Improve the performance of the reconciliation when the software model is set-up as per recommended steps.

– Installs not on development/test environments will not reconcile to Visual Studio suite. These will reconcile with the entitlements defined for the specific software product or show up as unlicensed installs.

Remediation details / Remediation steps

Reconciliation takes an inordinate amount of time to process whenever customers configure Visual Studio suite. The processing time has been greatly improved in recent releases.
• **Is suite engine taking most of the time ?**
– Creating allocations for the suite entitlements will improve the performance.
– Allocations can be defined. Installs which can be covered by allocated suites will perform faster than unallocated suites. Allocations can be of three types as below:
1. User allocations at entitlement level.
2. Device allocations at entitlement level.
3. User subscriptions in subscriptions(samp_sw_subscription) table.

• **How to calculate suite processing time for a publisher from recon logs?**
– We can calculate time taken by suite engine for each publisher using logs.
– Open "Reconciliation Progress Summary" table name "samp_recon_progress_summary".
– Open the specific recon summary according to the reconciliation result number.
– In related list Reconciliation Progress details, search for steps
1. Processing suites for the publisher 'xyz'
2. Done with suite engine for publisher 'xyz'
3. Time difference between of field "created" is actual time taken by suite processing for 'xyz' publisher.

• **Is it possible to have user allocations as well as user subscriptions together what will be considered for inferring suite?**
– It will vary according to license metric.

•**Non allocated installs for Visual studio are not getting inferred to visual studio?**
– Make sure inference percentage is correct inference percentage will be considered for non-allocated installs.
– Suppose the inference percentage is 70%. In that way there has to be 70 % components present so we can reduce the inference accordingly so that non allocated installs gets reconcile with visual studio license.
– With low inference(0) Make sure visual studio software model has install condition defined like device type is Development, Testing or Production otherwise all installs other devices too can get reconciled with visual studio.

Troubleshooting ITAM Software License Downgrade improvements

Context description	Remediation details / Remediation steps
Compliance improvements for software license downgrades	**1. Upgrade Fix Script: SAM - Remove RVU Allocations.** RVU is applied at the Product level so device allocations are no longer valid. As such, all device allocations will be deleted upon upgrade. **2. RVU factor table was changed:** • samp_ibm_rvu_tier_factor was removed • samp_ibm_rvu_tier was added **3. Scripts Added:** • SamPVULicenseCalculator • SamRVULicenseCalculator **4. Scripts Deleted:** • IBMLicenseCalculator • PVUFullCapacityLicenseCalculator • PVUSubCapacityLicenseCalculator • RVULicenseCalculator • RVUFullCapacityLicenseCalculator • RVUSubCapacityLicenseCalculator **5. Does this feature replace an older legacy feature?** • All previous behavior for PVU reconciliation remains as is. • RVU reconciliation changed significantly. Please see docs. **6. RVU recon is not applying the rights as shown in the Peak Full Capacity or Peak Sub Capacity of the install records.** • RVU reconciliation is applying the RVU tier factor calculation so this is expected. **7. Device Allocation Tab is missing from Software Entitlement for RVU** • RVU in current releases does not have allocations **8. Rights Used by is not shown in License Metric Results for RVU** • This is expected. RVU licenses at the product level so individual RUB for a device is not applicable. **9. Rights Needed by is not shown in Purchase Rights Remediation Options for RVU** • This is expected. RVU licenses at the product level so individual RNB for a device is not applicable.
Objective and Insight	
Software Asset Managers can take advantage of software maintenance and support benefits, apply licenses with active maintenance to cover older versions of installs and upgrade their software to the latest version.	

Thank you