**Stratus vRO WFs Release Note**

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| **1. Project Overview** | | | | |
| * **Document Revision History** | | | | |
| **Version No.** | **Prepared By** | **Reviewed By** | **Approved By** | **Release Date** |
| St-V-01 | Stratus Team | Gaurav Kumar |  | 05/09/2019 |
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| * **Modification Details** | | | | |
| **Version No.** | **Release Date** | **Description Of Change (if any)** | | |
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| * **Project Information** | | | | |
| **Project Name** | **Staging Release Period** | **Production Release Date** | | |
| Stratus | Every Q1, Q2 & Q3 |  |  |  |
|  |  |  |  |  |
| * **Environment and Application Information** | | | | |
| **Technology Under Test** | **Product Test Environmen**t | **Databases Involved/Impacted** | **Staging Environment Configuration** | |
| VMware | vRO & vSphere, vCloud Director, NSS, OnApp, UCSM, NSX, etc | MySQL | Same as DEV | |
| **Release Description** | | | | |
| * In this release, all the vRO WFs are refactored from PowerCLI to JavaScript as a better approach to automate VMware environment, vRO being the central controlling entity. This release introduces more efficient code execution, better error handling and increased scope of automation, elaborated logging, user interaction, internationalization, branding and more security to the customer environment. | | | | |
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**2. vRO Specifications, Plug-ins Versions & Global Configuration**

* **vRO Specifications:** vRO 7.5.0 Build 10044239 has been used in the development environment with remote vRO preconfigured. There is a master-slave configuration between local & remote vRO Server to allow proxy workflows' execution.
* **Plug-ins Versions:**

VC **6.5.0**

VAPI **7.5.0**

UCSM **1.0.4**

vCloud Director **9.7.0**

AMQP **1.0.4**

SOAP **2.0.0**

REST **2.3.0**

Powershell **1.0.13**

AutoDeploy **6.5.0**

NSX **6.4**

SSH **7.1.0**

Multi-Node **7.5.0**

SQL **1.1.4**

* **Global Configuration: -** CONFIGURATION Xavient (Current) holds the global configuration.

**3. What’s New?**

* Refactoring & modification of existing WFs.
* Migrated from Power CLI command to JavaScript code.
* Built additional language (French) - NSS Backup and Restore for end users.
* All WFs showing "Submit" button disable until and unless mandatory fields are filled.
* Better error handling to achieve robust coding.
* Carried out review of automation test scripts for the identified scenarios.
* WFs monitor and executions via REST API and Tested.
* Implemented TELUS branding for TELUS Stratus project
* Test Cases, Scenarios for each WF and tested techniques with (Unit, Smoke, regression & integration testing etc.)
* Documentations for each WF and its management.
* Implemented many action elements and sync with WFs as use API.
* Implemented dual-site provisioning.
* Automated virtual appliance creations.
* Automation process to implement VLAN's for customer environments.
* Improved mailing to support teams and end users.

***Important Note***: Configuration/Installation pre requisites:

* Need to disable automatic assigning the service profile in UCSM blade manager portal.

**4. Features & Enhancements in WFs.**

#### **3.1 In Validation WF**

* Connection and resource validation -> resource element templates added, plug-in objects fetch method changed.
* Removed duplicate logics in multiple ways.
* Include NSX manager URL login credentials check in Validation WF.

#### **3.2 In Security WFs**

* Modify the utility Org.TELUS.Xavient.util.getpVDCName to search against metadata instead of description.
* When logging into VCD as it is created as a local account it had to key on user.name as a login account.
* Because of federation configuration, vApp created in VCD doesn't not show up in OnApp - fixed

#### **3.3 In Provisioning WFs**

* NSS tenant creation was done by both AMQP and Tenant Onboard WF. NSS tenant created dynamically using AMQP notification. We have removed NSS tenant creation from Tenant Onboard WF.
* Metadata tag created on the pvdc Labelled TELUSCPID as a hidden number with the value currently used for BILLING\_ID.
* Provider vDC portion, claims success on updating hardware version when success we are able to monitor.
* Tested with new tenant with 2 blades. Deployment successful on Tenant Onboard.
* Workflow of NSS Tenant Management - AMQP / NSS tenant actions and tenant user creation successful.
* Host provisioning / managed access settings test passed.
* Tenant Onboard/Deploy Orchestration Model: get the last pVDC with the same name/hypervisor ID returned by OnApp, instead of the 1st one.
* Host Provisioning / Update NSX UNICAST: Type Error read property "vdnScope" - fixed
* Developed JSON structure of tenant representation.
* Provisioning bucket access has been added \*all\* external networks to bucket – fixed
* Automation of vApp Creation in vCloud Director with custom

#### **3.4 In Utility WFs**

* BMC POST points to remote vRO object for AMQP WF.
* A minor update on the Consume AMQP Notification changes in codebase.
* Refined AMQP initialization never got implemented-amend to move towards the "-imp" version.
* Replaced some code: Edge Gateway Provisioning - AMQP / Provision edge gateway.
* Edge gateway AMQP provisioning / actions getIPsBetweenRange and getUniqueBlocks now handle /24 subnet traversal.
* Edge gateway AMQP provisioning errors out. Expectation is that prior to modification a check for tasks is executed - fixed
* Add a firewall and NAT rules new WFs added with additional logging

#### **3.5 In Cleanup WF**

* Contains Workflows which allow cleaning up the environment i.e. decommissioning of Tenants, freeing up resources like VLAN, NSS, ESXi, UCS Blades etc.
* Clean up the code, break it out of the WFs and we able to create this.
* Remove VLAN, NSS Cleanup etc : new WFs added

**5. Code-Level Changes.**

* Check blade inventory -> Parse results some variables values fixed that is used in subsequent WFs.
* Host deployment ->Changes in reboot logic in host profiles, ESXI new images profile, re mediate issue fixed, additional script added “Set vSphere HA PortGroup on Cluster”.
* Host provisioning ->Using NSX unicast rest APIs.
* Tenant Onboard ->import VMware removed, logic orchestration models changes, resource elements added, TELUS theme fixes.
* Build external networks for bucket access control based on tags assigned.
* Changes made on OnApp rest API since new version of OnApp was being used.
* Blade qualification: New one added & vApp provisioning: New ones added.
* Re associate service profile to blade: new ones added.
* Set MIME Type of Resource Element: new ones added.
* Edge gateway provisioning - delete.
* Cleanup subscription new one added.
* Import VMware for Dual Site deleted.
* With OnApp 6-provider vDC imported via AMQP, import-VMware no longer required.
* Additional logging lists: Multi blade cleanup, Blade provisioning, Host deployment, Host provisioning.
* Custom property: (getObjectsWithCustomPropertyKey)-Remove VLAN, decommissioning process, multi blade cleanup, host deployment.
* Resource elements added: (replaceContentofResourceElement)-vApp Provisioning’s, Host provisioning, Edge gateway provisioning AMQP, org vDC networks AMQP, tenant onboard, host deployment.

**6. Action Elements Highlights.**

* **("org.telus.nss")**

authenticateUser()

changeTenantStatus()

checkUserExistenceByStatus()

deactivateTenant()

getclientidByName()

getNSSUsersIDByEmail()

setintegrationSettingValueForClient()

setUserPassword()

updateUserEmailAddress()

* **("org.telus.xavient.util")**

getIPsBetweenRange()

addDNSRecord()

addDNSRecordZoneScope()

AssignTagtoHost()

buildexternalNetwork()

checkHostExists()

cleanDHCPReecords()

createCluster()

createDHCPreservations()

createJSONstructureforTenant()

createTagAndtagId()

createTagCategory()

DHCPReservationCleanup()

fetchAssignedTagsfromObjects()

generatePassword()

getBladeTypes()

getClusters()

getComputePoolTypes()

getDataCenter()

getHostId()

getLDAPUserinfo()

getHostObject()

getPvdcName()

getNSXConnection()

setPortGroupvSphereHA()

removeDHCPScope()

DNSCleanup()

getPluginObject()

getpVDCName()

logBEMEventInBM()

getUniqueIPBlock()

buildExternalNetwork()

invokeRestOperation()

getHostObject()

* **("org.telus.onapp")**

CreateAndCheckBucket()

checkOrchestrationExistence()

CreateUserGroup()

createOrganization()

createUsers()

deletedUserByGroupId()

getBucketIdByName()

getEdgeGatewayIdByName()

getGroupAdditainalDetailByOrganization()

getHypervisorIdByName()

getNetworkZone()

getOrganizationIdByName()

getOrganizationByGroupId()

getUserDetailByEmail()

getUserGroupIdByName()

setOnAppUserPassword()

validateEmail()

* **("org.telus.util")**

InvokeRESTOprationsV2()

returnPluginObjectsArray()

* **("org.telus.vCloud")**

checkvCloudHost()

erasePVDC()

getTaskStatus()

getVclOrganization()

getvCloudHost()

getvCloudHostAdminExtension()

removevCloudHost()

setOrganizaionmMetadata()

**7. Resolved Legacy Anomaly.**

# [DEVOPS-115](https://jira.tsl.telus.com/browse/DEVOPS-115)

# **Summary**- NSS should be created in the system based on org creation (AMQP) notifications from vCD.

* [DEVOPS-116](https://jira.tsl.telus.com/browse/DEVOPS-116)

**Summary-**Organization removal from vCloud / OnApp should be dynamic.

* [DEVOPS-118](https://jira.tsl.telus.com/browse/DEVOPS-118)

**Summary-**Reporting / logic flow issue on host reboots in host deployment / apply host profile.

* [DEVOPS-119](https://jira.tsl.telus.com/browse/DEVOPS-119)

**Summary-**Host deployment / apply host profile validates vCD hosts.

* [DEVOPS-120](https://jira.tsl.telus.com/browse/DEVOPS-120)

**Summary-**Host provisioning -> tenant onboard -> create NSS tenant error.

* [DEVOPS-121](https://jira.tsl.telus.com/browse/DEVOPS-121)

**Summary-**pVDC's are found based on description, should be based on metadata.

* [DEVOPS-122](https://jira.tsl.telus.com/browse/DEVOPS-122)

**Summary-**Because of federation configuration, vApp created in VCD doesn't not show up in OnApp.

* [DEVOPS-123](https://jira.tsl.telus.com/browse/DEVOPS-123)

**Summary-**Add a site doesn't update the bucket permissions properly.

* [DEVOPS-135](https://jira.tsl.telus.com/browse/DEVOPS-135)

**Summary**- R2 workflows need to be ported to KIDC Dev.

* [DEVOPS-153](https://jira.tsl.telus.com/browse/DEVOPS-153)

**Summary-**Update host naming in workflows to reflect asset tags.

* [DEVOPS-154](https://jira.tsl.telus.com/browse/DEVOPS-154)

**Summary-**promote code to KIDC Dev.

* [DEVOPS-190](https://jira.tsl.telus.com/browse/DEVOPS-190)

**Summary-** AMQP handling improvements.

* [DEVOPS-235](https://jira.tsl.telus.com/browse/DEVOPS-235)

**Summary-**Misalignment between resource check and validation and blade provisioning.

* [DEVOPS-271](https://jira.tsl.telus.com/browse/DEVOPS-271)

**Summary-**NSS restore to alternate vApp doesn't filter based on location of source backup image.

* [DEVOPS-272](https://jira.tsl.telus.com/browse/DEVOPS-272)

**Summary-**Workflow required to query all OnApp / NSS user accounts and add / correct missing ones.

* [DEVOPS-291](https://jira.tsl.telus.com/browse/DEVOPS-291)

**Summary-**NSS French language bug.

* [DEVOPS-314](https://jira.tsl.telus.com/browse/DEVOPS-314)

**Summary-**Need an automation process to implement VLAN's for customer environments.

* [DEVOPS-317](https://jira.tsl.telus.com/browse/DEVOPS-317)

**Summary-**Change some attributes mapping to the main configuration ones.

* [DEVOPS-325](https://jira.tsl.telus.com/browse/DEVOPS-325)

**Summary-**Scriptable object in TELUS\R2\host Provisioning update pVDC claims success regardless of state.

# **Resolution:**

* [DEVOPS-326](https://jira.tsl.telus.com/browse/DEVOPS-326)

**Summary-**Update NSX unicast is failing (staging)

* [DEVOPS-327](https://jira.tsl.telus.com/browse/DEVOPS-327)

**Summary-**Improved error handling.

* [DEVOPS-330](https://jira.tsl.telus.com/browse/DEVOPS-330)

**Summary-**NSS sub portal is missing the deleted items capability.

* [DEVOPS-331](https://jira.tsl.telus.com/browse/DEVOPS-331)

**Summary-**pVDC HW Version not being set to the highest version

* [DEVOPS-332](https://jira.tsl.telus.com/browse/DEVOPS-332)

**Summar**y-Limit NSS password generation to alpha-numerical plus tested special chars only.

* [DEVOPS-334](https://jira.tsl.telus.com/browse/DEVOPS-334)

**Summar**y- Set pVDC metadata WF -- sets TELUSCPID to 0 if key not found.

* [DEVOPS-335](https://jira.tsl.telus.com/browse/DEVOPS-335)

**Summar**y-Some attributes need to be moved out and mapped to the configuration file.

* [DEVOPS-337](https://jira.tsl.telus.com/browse/DEVOPS-337)

**Summar**y-Configuration parameter ONAPP\_APIKEY is type string.

* [DEVOPS-339](https://jira.tsl.telus.com/browse/DEVOPS-339)

**Summar**y-Dev/stratus/r2/utility AMQP provisioning flows fail to execute correctly.

* [DEVOPS-340](https://jira.tsl.telus.com/browse/DEVOPS-340)

**Summar**y-Invoke Rest Operation Groups.

* [DEVOPS-342](https://jira.tsl.telus.com/browse/DEVOPS-342)

**Summar**y-Error in (Workflow: Tenant Onboard / Deploy Orchestration Model.

* [DEVOPS-343](https://jira.tsl.telus.com/browse/DEVOPS-343)

**Summar**y-R2: Org VDC Networks creation fails.

* [DEVOPS-344](https://jira.tsl.telus.com/browse/DEVOPS-344)

**Summar**y-R2: NSS tenant creation fails.

* [DEVOPS-345](https://jira.tsl.telus.com/browse/DEVOPS-345)

**Summar**y-R2: Host provisioning / managed access settings failed.

* [DEVOPS-351](https://jira.tsl.telus.com/browse/DEVOPS-351)

**Summar**y-Error in (Workflow: Tenant Onboard / Deploy Orchestration Model (item56) #138) FP failed to be deployed.

* [DEVOPS-355](https://jira.tsl.telus.com/browse/DEVOPS-355)

**Summar**y-Error in (Workflow: NSS Tenant Management - AMQP / NSS tenant actions (item4) #63) Tenant user creation failed.

* DEVOPS-358

**Summary-**BMC POST points to a remote vRO object in R2/Utility WFs.

* [DEVOPS-360](https://jira.tsl.telus.com/browse/DEVOPS-360)

**Summary-**UCS blade error during assignment the SP to the blade chassis “dn”

* [DEVOPS-361](https://jira.tsl.telus.com/browse/DEVOPS-361)

**Summary-**Host Provisioning / Update NSX UNICAST: Type Error: Cannot read property "vdnScope" from undefined.

* [DEVOPS-362](https://jira.tsl.telus.com/browse/DEVOPS-362)

**Summary-**Include DC\_NSX\_VCD\_PUSER/DC\_NSX\_VCD\_PASSWD & manager url into the Connection validation WF.

* [DEVOPS-363](https://jira.tsl.telus.com/browse/DEVOPS-363)

**Summary-**Tenant Onboard/Deploy Orchestration Model: get the last pVDC with the same name/hypervisor ID returned by OnApp, instead of the 1st one.

* [DEVOPS-420](https://jira.tsl.telus.com/browse/DEVOPS-420)

**Summary-**Org.telus.util/Run Async Workflow Cleanup change method.

* [DEVOPS-421](https://jira.tsl.telus.com/browse/DEVOPS-421)

**Summary-**Refactor WFs - Issue When Deploying 2 or More ESXi Servers.

* [DEVOPS-428](https://jira.tsl.telus.com/browse/DEVOPS-428)

**Summary-**Import the WFs sent into LIDC DV and make some final updates.

* [DEVOPS-430](https://jira.tsl.telus.com/browse/DEVOPS-430)

**Summary**-Include NSX manager URL login credentials check in Validation WF.

* [DEVOPS-431](https://jira.tsl.telus.com/browse/DEVOPS-431)

**Summary-**Replace some code: Edge Gateway Provisioning = AMQP / Provision edge gateway step.

* [DEVOPS-433](https://jira.tsl.telus.com/browse/DEVOPS-433)

**Summary-**A minor update on the Consume AMQP Notification WF.

* [DEVOPS-436](https://jira.tsl.telus.com/browse/DEVOPS-436)

**Summary-**Org.telus.vCloud.getvCloudHost doesn't handle multiple nodes correctly.

# **Resolution:**

* [DEVOPS-439](https://jira.tsl.telus.com/browse/DEVOPS-439)

**Summary-**Connection and resource duplicates logic in multiple ways.

* DEVOPS-447

**Summary-**on AMPQ policy start for vDC Subscription the on init duplicates the subscription.

* [DEVOPS-449](https://jira.tsl.telus.com/browse/DEVOPS-449)

**Summary-**Refined AMQP initialization never got implemented.

* [DEVOPS-452](https://jira.tsl.telus.com/browse/DEVOPS-452)

**Summary-**Current workflows have json / xml interspersed throughout - should be resources.

* [DEVOPS-490](https://jira.tsl.telus.com/browse/DEVOPS-490)

**Summary-**Retrieving unassigned blades needs improvements.

* [DEVOPS-491](https://jira.tsl.telus.com/browse/DEVOPS-491)

**Summary-**Create cluster fails, picks up a wrong datacenter object when more than 1 VC exists.

* [DEVOPS-508](https://jira.tsl.telus.com/browse/DEVOPS-508)

**Summary-**Develop JSON structure of tenant representation.

* [DEVOPS-509](https://jira.tsl.telus.com/browse/DEVOPS-509)

**Summary-**Create add a VM workflow.

* [DEVOPS-513](https://jira.tsl.telus.com/browse/DEVOPS-513)

**Summary-**Action add DNS record zone scope needs modification.

* [DEVOPS-521](https://jira.tsl.telus.com/browse/DEVOPS-521)

**Summary-**Multiple workflows / scriptable objects have unused inputs / outputs.

* [DEVOPS-556](https://jira.tsl.telus.com/browse/DEVOPS-556)

**Summary-**Org.telus.onapp.createorganization uses json and xml.

* [DEVOPS-557](https://jira.tsl.telus.com/browse/DEVOPS-557)

**Summary-**Org.telus.onapp.CreateAndCheckBucket uses xml and json.

* [DEVOPS-559](https://jira.tsl.telus.com/browse/DEVOPS-559)

**Summary-**With onapp 6; provider vdcs imported via amqp, import-vmware no longer required.

* [DEVOPS-563](https://jira.tsl.telus.com/browse/DEVOPS-563)

**Summary-**Cleanup actions in vRO.

* [DEVOPS-573](https://jira.tsl.telus.com/browse/DEVOPS-573)

**Summary-**TELUS/r2/provisioning/tenant onboard/bucket access control adds \*all\* external networks to bucket.

* [DEVOPS-574](https://jira.tsl.telus.com/browse/DEVOPS-574)

**Summary-**Change the value type in Sync OnApp User with NSS.

* [DEVOPS-579](https://jira.tsl.telus.com/browse/DEVOPS-579)

**Summary-**Multiple errors reported while debugging the host provisioning workflow.

* [DEVOPS-581](https://jira.tsl.telus.com/browse/DEVOPS-581)

**Summary-**Onapp 6.0 changed units in orchestration models for VCPU speeds from GHz to MHz.

* [DEVOPS-584](https://jira.tsl.telus.com/browse/DEVOPS-584)

**Summary-**vSphere ESXi HA > SVCS Port group to be Explicitly Used.

* [DEVOPS-589](https://jira.tsl.telus.com/browse/DEVOPS-589)

**Summary-**All workflows showing "Submit" button pre-enable even mandatory fields are empty.

* [DEVOPS-592](https://jira.tsl.telus.com/browse/DEVOPS-592)

**Summary-**Edge gateway AMQP provisioning / actions getIPsBetweenRange and getUniqueBlocks don't handle /24 subnet traversal.

* [DEVOPS-593](https://jira.tsl.telus.com/browse/DEVOPS-593)

**Summary-**Edge gateway AMQP provisioning errors out.

* [DEVOPS-654](https://jira.tsl.telus.com/browse/DEVOPS-654)

**Summary-**Org VDC Networks provisioning sometimes results in: resource pool is locked.

**8. Known Anomaly**

* DEVOPS-661

**Summary-**User AMQP policy creating detrimental NSS interactions.

**Observing-**NSS integration part where wrong credentials are set for the vCloud username and password by the "Sync OnApp user with NSS" workflow.

**Conclusion**- In Progress.

* DEVOPS-662

**Summary-**NSS imports for production users are broken.

**Observing**- Logic is added for the resolving this: WFs would set NSS integration only for users starting with format BACKUP-xx@nss.local.  
So basically the WF will check if such backup accounts are present in OnApp. If they do exist, then set the NSS integration "vCloud username" and password accordingly.

**Conclusion**- In Progress.

* WF Name: Update postal code

**Summary-**Update the postal code for organizations.

**Observing-**Not fetching correct data.

**Conclusion**-Need to be fixed

* WF Name: Decommission Process

**Summary-**Unable to clean up the pVDC

**Observing-**The vAPI of vCloud throwing null pointer exceptions for some admin objects.

**Conclusion**-Need to be fixed

* WF Name: Dual Site Provisioning

**Summary-**Remote Site Issues

**Observing-** ESXi host not preparing properly.

**Conclusion**-Need to be fixed.