Rolling/Express Upgrade Pre-checks and Remediation (in case of errors)

Title	Purpose of the pre-check	Type	Applicable For: RU/EU/Both	Remediation
SERVICE_CHECK	If service's configuration is modified and no service check has been run since, that service would show up in the error. This check is to verify that the services are in healthy state before upgrade	SERVICE	Both	Run Service check for all services listed in the message
ATLAS_SERVICE_PRESENCE_CHECK	Checks for presence of Atlas service prior to upgrade. This check applies for upgrades from HDP versions at 2.4.2.0 (or earlier) TO HDP-2.5.0.0 (or above)	SERVICE	Both	Delete Atlas service from your cluster before upgrade
CLIENT_RETRY	Client Retry Properties enabled for Hive, Oozie. HDFS needs to prevent client retry since that causes them to try too long and not failover quickly.	SERVICE	Both	Enable the configs from respective service configuration HDFS: dfs.client.retry.policy.enabled to false Hive: hive.metastore.failure.retries to a positive value Oozie – oozie-env template must contain a retry count such as: export OOZIE_CLIENT_OPTS="${OOZIE_CLIENT_OPTS} -Doozie.connection.retry.count=5 "
COMPONENTS_INSTALLATION	Checks for successful installation of all service components	SERVICE	Both	Ensure no service components are in install failed state; in other words successfully installed
CONFIG_MERGE	Checks for conflicts during configuration merge. Warnings are generated in following cases: a. A value that has been customized from older HDP version no longer exists in newer HDP version b. A value that has been customized from older HDP version has changed its default value between older HDP version and newer HDP version	CLUSTER	Both	Warning message only, generally no remediation is required.
HARDCODED_STACK_VERSION_PROPERTIES_CHECK	Checks for hardcoded CURRENT stack version in property value. Presence of such properties usually means that some paths are hardcoded to point to concrete version of HDP, instead of pointing to current symlink; which can cause issues during upgrade	CLUSTER	Both	Inspect the property value from the message and remove the hardcoded stack version. Example - Change the value from "/usr/hdp/2.4.2.0-258" to "/usr/hdp/current/"
HEALTH	Checks for the health of the cluster like no alerts present, no services down, no hosts are down	CLUSTER	Both	Fix the respective issue based on the error reported. There might be warnings for this checks which can be ignored
HOSTS_HEARTBEAT	All cluster hosts must communicate (heartbeat) with Ambari	HOST	Both	Hosts which are not reachable should be either deleted from the cluster or placed in maintenance mode; alternately the issue can be fixed to restore the communication between Ambari server and the host
HOSTS_MAINTENANCE_MODE	Cluster hosts in maintenance mode would be excluded from upgrade	HOST	Both	Warning to notify the Administrator about hosts in maintenance mode; You can start the upgrade but may need to delete the hosts that were in maintenance mode before you finalize the upgrade
HOSTS_MASTER_MAINTENANCE	Hosts in Maintenance Mode must not have any master components	HOST	Both	Remove such hosts from Maintenance mode, so that they can be considered

				for upgrade
HOSTS_REPOSIT ORY_VERSION	All hosts should have target version installed	HOST	Both	If for some reason the package installation step had failures for one or more hosts, retry that step and ensure it succeeds on all hosts
INSTALL_PACKAG ES_CHECK	Install packages must be re-run	CLUSTER	Both	Similar to the last check, except that this is done at cluster level. Fix package install issues on any of the affected hosts
PREVIOUS_UPGR ADE_COMPLETE D	Check to verify if an earlier upgrade completed	CLUSTER	Both	Finalize any previous upgrade so that it is considered as completed
SECONDARY_NA MENODE_MUST_ BE_DELETED	Delete Secondary Namenode from the host	HOST	RU	Enable Namenode High Availability from Ambari UI under HDFS – Service Actions
SERVICES_HIVE_ DYNAMIC_SERVI CE_DISCOVERY	Check to verify if Hive is properly configured for dynamic discovery	SERVICE	Both	Enable hive.server2.support.dynamic.service.d iscovery under Hive config
SERVICES_HIVE_ MULTIPLE_META STORES	Checks that there are at least 2 Hive Metastore instances in the cluster	SERVICE	RU	Warning, but recommended to fix to ensure no downtime for Hive; Add additional Hive Metastore instances under Hive – Service Actions
SERVICES_HIVE_ ROLLING_PORT_ WARNING	Warning message that will let the administrator know that the port for Hive must change in order to preserve the uptime of the service.	SERVICE	RU	Warning only, no action is generally required. However if this behavior is not desired, then the port can be restored to its original value after the upgrade has been finalized.
SERVICES_MAINT ENANCE_MODE	No services can be in Maintenance Mode	SERVICE	Both	Remove the listed services from maintenance mode
SERVICES_MR_DI STRIBUTED_CAC HE	Checks that MR jobs reference hadoop libraries from the distributed cache	SERVICE	RU	Ensure that the two MapReduce configs: mapreduce.application.classpath, mapreduce.application.framework.pat h point to the appropriate classpath for MR applications and MR archive (tar file) respectively Verify that the value of fs.defaultFS HDFS config is correctly defined as "hdfs://host:port" or "hdfs://<NameService ID>"
SERVICES_TEZ_DI STRIBUTED_CAC HE	Checks that Tez jobs reference hadoop libraries from the distributed cache	SERVICE	RU	Ensure that Tez configs: tez.lib.uris points to an appropriate Tez archive (usually tar.gz fie) tez.use.cluster.hadoop-libs set to false Verify that the value of fs.defaultFS HDFS config is correctly defined as "hdfs://host:port" or "hdfs://<NameService ID>"
SERVICES_NAME NODE_HA	NameNode High Availability must be enabled	SERVICE	RU	Enable Namenode HA from Ambari UI under HDFS – Service Actions
SERVICES_NAME NODE_TRUNCAT E	Checks that NameNode Truncate must not be allowed	SERVICE	RU	Verify that dfs.allow.truncate is set to 'false' in HDFS configs
SERVICES_STOR M_ROLLING_WA RNING	Storm Downtime During Upgrade. Would require to stop all running topologies before Storm is restarted	SERVICE	RU	Warning message only, no action required
SERVICES_UP	All services must be started	SERVICE	Both	Start any of the services which are in stopped state
SERVICES_YARN_ RM_HA	Check to verify if YARN Resource Manager HA is enabled	SERVICE	RU	Warning only, but recommended to fix to prevent any disruption in service during upgrade. From Ambari UI – YARN – Service Actions – Enable Resource Manager High Availability
SERVICES_YARN_ TIMELINE_ST	Check that the YARN Timeline server has state preserving mode enabled	SERVICE	RU	Under YARN Service configuration: yarn.timeline-service.recovery.enabled

				set as true
SERVICES_YARN_WP	Checks that YARN has work-preserving restart enabled	SERVICE	RU	Enable the below config from YARN Service configuration: yarn.resourcemanager.work-preserving-recovery.enabled
VERSION_MISMATCH	All components must be reporting the expected version	HOST	Both	Ensure that package installation operation is successful on all hosts for target upgrade version
RANGER_SERVICE_AUDIT_DB_CHECK	Warning message to indicate that Ranger Service will not support Audit to DB after upgrade to 2.5 stack. Instead, Ranger will audit to Solr This check is done by reading the value of ranger.audit.source.type Ranger config	SERVICE	Both	To migrate existing audit logs to Solr, follow the steps in Apache Ranger documentation for 0.6 release
SERVICES_RANGER_PASSWORD_VERIFY	Verify Ambari and Ranger Password Synchronization. This pre-check verifies password match for following Ranger users under Ranger configs: a. admin – Defined under 'Advanced ranger-env' section, for field named 'admin_password' b. amb_ranger_admin – Defined under 'Admin Settings' for field 'Ranger Admin user's password for Ambari'	SERVICE	Both	At any point of time, if the password for Ranger admin user account or amb_ranger_admin user account was changed from Ranger Admin UI, the same password should be provided in the respective fields admin_password or 'Ranger Admin user's password for Ambari' under Ranger configs in Ambari UI

Table updated as of Ambari 2.4 release on http://docs.hortonworks.com/

Source page - https://community.hortonworks.com/articles/54944/stack-upgrade-pre-checks-purpose-and-remediation.html