

Transport Inspector

Predictive answer to the transport menace

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Introduction

In today's fast paced world, each and every task and business activity is quantified by the timeline or else Turn Around Time (TAT). On a ground level reality - organizations are busy switching over to ERP implementation to simplify any complex business process and thereby streamline the entire set of line of businesses into one single entity.

Talking about SAP in particular - Change and Transport System (CTS), is often mistaken and disguised as a simple process, whereas in reality, it is indeed a complicated system by itself. Basically, to put down in simple words - SAP's Change and Transport System (CTS) is a tool which helps to organize as well as customize your projects in ABAP Workbench and later provide support in transporting these changes between the SAP systems onto our system landscape.

The migration engineer can also transport Java objects (J2EE, JEE) as well as SAP-specific (Web Dynpro Java or SAP Enterprise Portal). The transport process is not just confined to these mentioned platforms but also widely open to other non-ABAP technologies too.

Typically, SAP systems are well recognized for handling mission-critical and accounting-related business processes but now a days it is having a different perspective to share – SAP is adhering to systems as well as applications that entails a big risk which can eventually bring the business to a standstill. Also, the processes belonging to SAP transport system play a key role in governing the import of these changes that are imbibed into the production systems which further leads to a seamless transition.

On a daily basis, people handling the Transport Activity usually focus on the pace at which the transports are moved from one system to another, this makes absolute sense from a business angle. But, at the end of it, if the change management is poor then it definitely carries a bad impact. To correct an error arising out of a Transport Request (TR), the TR owner generally addresses the issue later. At times, addressing an erroneous Transport Request becomes a cumbersome process to deal with. and also, over writing of new program on top of the older one / previous version turns out to be a painful affair.

In case, if the TR owner overwrites a new version of an object over an older one then, there is no way to retrieve the new version of the object that was modified. Hence, in such a scenario, the end user needs to be extremely cautious before he moves the TR changes further into a another system. To make this task more simple and easy, a well-defined process is chalked out which supplements the user to cross check all the objects and their versions that are present under the Transport Request. The person handling the Transport activity can use this to determine the fate of objects and prevent any such problems which would shape up the transport process to be more reliable display error-free results.

The ideal way to create an agile system for the entire Transport Management Process is to build a tool that would allow the TR owner to check the objects in a Transport Request and determine their outcome, when transported to target system. In presence of a robust system, even if TRs are not bundled in releases and are brought in at a production stage on ADHOC basis, chances of having transport errors, or business break down is nullified.

Objective

In the growing complexity of SAP environment, transport administrators are now dealing with the main problem reflecting upon - **How to avoid errors during Transport Management Process?**

The whole objective of this white paper is to provide guidelines on how an organization can build a robust tool and successfully run it to manage their transport systems in a better way by delivering zero errors. Also, it revolves around resolving or avoiding issues incurred during the Transport Process.

It also showcases on how to optimize the quality of SAP Change Management by adopting well-defined workflows, processes and automated checks as part of i.e., – **“The Transport Inspector Tool”**

Core Functions of Transport Inspector Tool

- Transport Order Management
- Synchronization of Transport Requests
- Maintenance of Transport Version
- Planning & Optimization
- Maintenance of Governing Regulations
- Implementation of Automated Transport

White Paper Explained

SAP Systems are very efficient in handling critical business processes which may involve financial processes, sales & marketing activities, payroll processes of employees or other such important tasks.

This explains the importance of Transport management system wherein the Transports should be thoroughly checked at least once for the versions belonging to all the objects as they hold and what it would lead to when it is transported to another system.

Transport Management process usually depends on defined time intervals however organizations prefer to transport their changes by setting up a pre-set time gap; for ex: every day at 6 a.m., 12 p.m. and then 5 p.m. - thus making it easier for an organization to keep a track of all the imports that are re-directed into their production system. With the help of this defined time period, going forward, any negative effects occurred by the transports can be immediately handled since there are enough resources available at those time frames for resolving these errors.

Ideally, each TR possess a technical document consisting of all the details, such as - the number of objects that it holds, changes carried out in each object, the developer & the functional person information who is handling the changes, the time frames when the changes were carried out, business reasoning for carrying out those the changes, etc.

In order to implement any of these changes in production, the TR should approve all the details on the system. If the details are not approved then the changes made in the Transport system cannot be imported.

To keep a track of all the changes, a retrospective process is followed which keeps a check on the production system. This comes into picture only after a fatal incident happens followed by a corrective action to determine the cause and rectify it on time which eventually could lead to more anomalies in future.

If there is a tool that existed to predict the impact of the TR, then, the TR would be moved to a target system, only after the concerned person is notified about the anticipated errors. As a result, a corrective action could be thought upon in detail instead of making a decision in hurry.

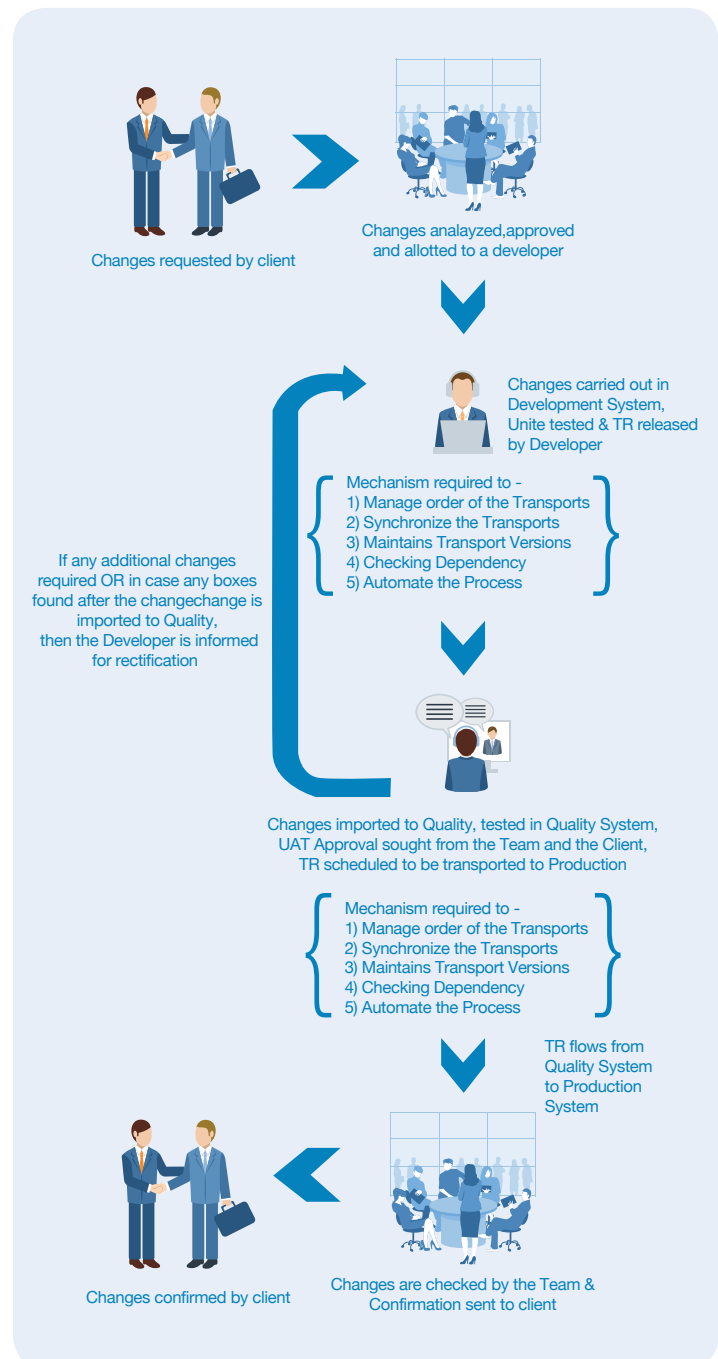
The changes could be implemented after proper testing and review which would ultimately lead to a more stable and error free production system environment. Therefore, production phase would not be prone to face such errors that arise out of improper handling of transports.

SAP Change and Transport system focusses on quality improvisation of the Transport Management by performing automated checks for all the objects present in the TR.

Also, it deep dives into the mechanism on how to make use of a particular tool and evaluate TR in depth thereby the errors arising out of the Transport Process can be completely avoided in the first place.

SAP Change and Transport system helps you to avoid transport errors.

Current Transport Process in Place



Planning Changes Properly

To ensure that we don't compromise over the quality of SAP change management, it is crucial to keep those implemented changes intact. Companies need secure and precise methodologies to systematically improve the processes that further helps in handling the import of their SAP transport in the following ways:

Many companies prefer to import their changes into their production environment by means of periodic releases. For example: once in every quarter or once in a month, by focusing only on those few dates, companies limit the risk of adverse effects on their production systems with respect to these specified time interval and the benefits availed are obviously good.

The alternative to these periodic releases is to rely on ad hoc transports to import changes to the production systems on an as-needed basis. With the help of a predefined process, scheduled developments are captured in individual change request window and later they are moved on to production system in a timely manner.

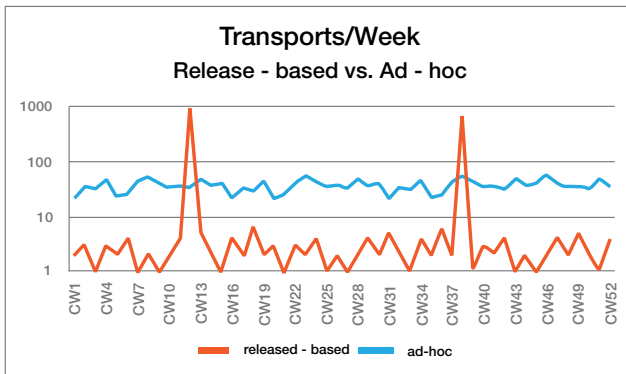


Figure 2: Planning changes properly

The benefits offered are greater flexibility with the caliber to respond to problems much faster, as packages are much smaller and also making it easier and simpler to resolve errors.

Regardless of how they are scheduled, these two approaches have one thing in common: All change requests must be described in detail, only then they can be classified, reviewed, and approved by the change manager.

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Key aspects for effective SAP Change and Transport Management

- Establish a reliable change management process
- Ensure consistent processes for all changes
- Make sure to capture and approve change requests for every change

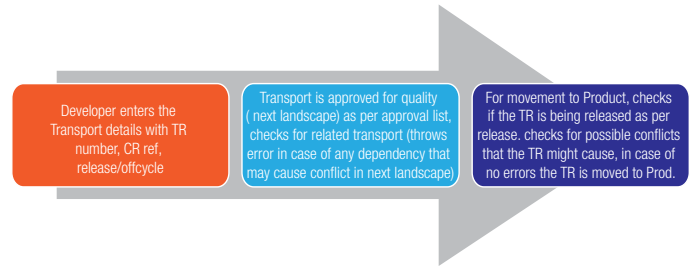


Figure 3: Effective Transport Process

The Transport Inspector encourages companies to implement an integrated change management process for their SAP systems.

- Assign responsibilities throughout the process
- Enforce the segregation of duties
- Document all activities
- Maintain audit trails

The Transport Inspector should analyze all the changes that are carried out under the Transport management system, for which, this process acts like an agent to review any kind of change request made on the CTS. Here after, companies can save enormously on the cost factor which is being spent towards unnecessary resources, assessing the requirements, determine its impact and thereafter schedule the changes accordingly.

Many companies shy away from implementing an integrated change management process for their SAP systems. If at all they do, they rely solely on isolated Excel sheets or similar tools to execute their planning processes. Some organizations even choose not to manage their development requests at all which can easily result in unnecessary SAP transports and a considerable waste of time and money.

By establishing a reliable, accurate tool and deploying an integrated change management solution, companies can thereby achieve significant quality improvements, notice reduction in the workload of their staff which ultimately leads to availability of valuable resources.

Approval for a Change Request

Foremost, to monitor any kind of change requests made or executed on the system, we need to chalk out a well-defined process. Basically, here, the change request will be first reviewed by the process owner followed by the owner's approval, and then finally, it will be scheduled and assigned to a developer at a later stage.

The Transport Inspector will then evaluate the objects dependency that are being touched during development just to ensure that no development changes are being transported without prior approval of the change request. It is also crucial to keep a full audit trail of all requirements and their corresponding changes in the log.

Co-ordinated Development Process:

Maintaining the Order & Avoiding the Errors

Application development process is one of the most important aspect to be considered which needs a super strict vigilance. One transport can involve a variety of technical changes, which in turn necessitate many different SAP transports.

A major challenge faced by the user is to identify potential interferences and collisions with other change requests or development projects ahead of time. This is where the “1-10-100 rule” comes into action.

The rule states that the cost of an error increases exponentially as it is discovered later. The cost of correcting an error during testing is about 10 times higher than during development, and is about 100 times higher once it reaches the production systems.

It is also important to link up the transports with a change request, project development, and/or release in the right order.

Even though SAP transports are context-related due to the definition of change requests, there are a number of other technical requirements that one needs to consider seriously. Prior to the import of SAP transport - a change or release, it is important to make sure that they fit the overall context of all the current changes that lies within a system.

Failure to verify the correct order of transports can lead to transports from different change requests or releases being imported at the wrong time. This results in over takers, whose consequences are not immediately but definitely showcases after completion of the import.

The damaging effects of an over taker are felt later, when a required functionality is no longer available in the production system and the company has to invest additional time and money to restore the lost functionality. Restoring the correct import order of transports often requires significant effort. Features that have already gone live have to be reset and individual systems may have to be turned off during error recovery.

Preventing these types of situations and the costs associated with them are the primary objective of Transport Tool. Too often, over takers remain undetected for extended period of time.

If a large number of changes have been made to the production system since the import is erroneous, it is usually no longer sufficient to simply re-import these transports. This makes it all the more important to detect potential over takers or object collisions before importing them into the production system, notify users, and to identify the correct order.

The Transport Tool takes care that there's no loophole during the verification of order.

Completeness Checks:

Identifying Dependencies between different SAP Transports

Besides, keeping an eye on the correct order of changes, the end user at the same time, also needs to consider its completeness which is equally essential. Technical dependencies between the objects landing from different SAP transports can potentially cause serious problems during importing and activating changes in the production system. For example, a function module that accesses a data element - If the function module is imported into the production system without the data element being present in the system, it cannot be activated – a costly import error both in terms of time and money occurs in parallel.

A larger and more complicated change overall develops a more complex relationships in due course. As the user deals with a new release, they can no longer adequately handle the intricacy involved with it. Therefore, it is mandate to use dedicated tools for reviewing changes which is applicable across all levels to check upon its completeness, before importing them into the production system. Organization can brainstorm upon their security and quality of SAP change management which farther leads to reduction in terms of cost, risk, and time involved.

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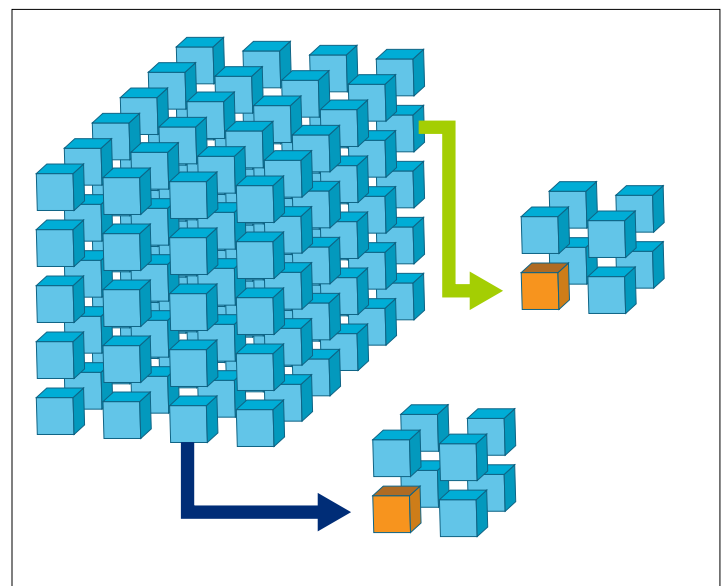


Figure 4: Identifying dependencies between different SAP Transports

Key Features of the Idea Development

- Automation of transport objects
- Systematic workflow of TR from one system to another system as per the landscape
- Avoid manual intermission
- Proper authentication
- Eliminate human/manual efforts

Transport Inspector Tool and Benefits to Business

The Transport Inspector tool sustains on these basic principles that are discussed below.

It primarily checks upon –

- The objects present in the TR should be **syntax error free**.
- All the objects should be **activated**.
- The **version of each object** would be noted from the Source System.
- The version of all the objects that are part of TR would be derived from the **Target System**.
- There would be a comparative version between **Source and Target System**.
- The **dates are noted/highlighted** from the Target System to identify object's actual version. If the new version is present in the Target System and if TR is holding an older version then, proper reasoning would be recorded and an approval from the business owner is a must.
- The tool would work before a **TR is released** so that the corrective actions could be carried out.
- The **TRs sequencing is captured properly**, so that none of the system in the landscape is missed out.
- It **identifies dependencies** between different TRs, if they are a part of the same slot.

Any other similar accelerator/tool/best practices available in the market?

TOOLS	FEATURES
Transport Manager Transport sequencing (dependency creation), A popup can be generated during approval for Transports containing critical objects and for transports containing changes on same object lying in the transport queue, object collisions will be displayed during approval, etc.	Charm 2013 SAP Solution Manager Some basic features SAP released pack in SAP Solution manager 7.1
	REV-TRAC Offers similar functionality like our tool but super expensive, Has a very inflexible and expensive licensing model so if someone has a huge landscape it would cost a lot.
Transport Express Automates the SAP change process and manages the complexity of deploying changes, freeing up your people to focus on high quality SAP design and development	ZTRA An out-of-the box SAP add-on solution which enhances the standard Change and Transport System (CTS or TMS) by providing a convenient framework for monitoring, approving and importing transport requests

The Transport Inspector will help the companies to effectively manage their transports with least risk of failures.

Conclusion

Transport Inspector (TI) holds complete responsibility of facilitating the transport system by keeping least risk of failures associated with it. Also, the Production Environment is quite easy to maintain as it remains stable because of Transport Inspector.

Additional benefit provided by SAP Change and Transport System – it shares amazing potential to check dependency between all the objects, i.e., status of the objects and order in which the transports will be moved to next SAP landscape.

References

- www.sap.com
- scn.sap.com
- http://help.sap.com/saphelp_me60/helpdata/en/c4/6045377b52253de10000009b38f889/content.htm?frameset=/en/57/38dd924eb711d182bf0000e829fbfe/frameset.htm
- http://help.sap.com/saphelp_me60/helpdata/en/44/b4a3507acc11d1899e0000e829fbbd/content.htm



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