Can Role-Based Automation Pave the Way for Zero Touch Operations?

A shift in the focus of automation from individual use cases to all activities performed by a role will lead to technology-run operations with minimal human intervention.

Over the last couple of years, we have seen the importance of automation in IT operations grow significantly.
These automations are targeted towards enabling faster, efficient, and error-free operations. However, such use-case driven automation requires human efforts to complete the end-to-end operational activities, which are not covered by the automated use cases.

The key issue with the dependency on human resources for driving day-to-day operations is the overhead involved in resource planning, fulfillment, allocation etc., which brings with it many inefficiencies to the operations.
On top of it, the risk of manual error during production changes will always remain and significant overheads will be added in terms of process to mitigate the risk. Such processes in turn, slow down the rate of change and impact the time to market for the changes required by business.

So, instead of focusing on individual use cases, if the focus of automation changes to automate all the activities that are to be performed by a role, we will be able to conceive the idea of IT operations that is run by technology for the most part and human intervention is used only where absolutely necessary. This will pave the way for zero touch operations eventually. In situations, like the current COVID-19 crisis, when most of the workforce are working from home, technology-managed operations are better for the business.

Some of the benefits that we can realize through the role-based automation approach are:


More efficient operations with a much higher throughput


Ability to scale operations without delay


Error-free operations without risk of human errors


Standardization across the board with enforced best practices


Higher availability of services

The need to identify apt roles for automation

We know that the roles in IT operations are defined based on the combination of technology, process and level of complexity. In order to get automation to execute the activities of a role, the activities performed by a role have to be re-assessed and re-aligned such that what can and must be done through technology are separated from those which require human intervention. By doing so, it will become obvious what kind of roles are more amenable to be driven through automation. This will also help us utilize human resources optimally, adding more value to the operations where applied.
While the idea of role-based automation seems interesting, one needs to be judicious in selecting the right role to be automated. The selection of the right kind of roles will go a long way in making this approach effective and sustainable.
Some of the typical roles that could align with this approach are:

Infrastructure tower operations

Multiple towers make up the infrastructure operations. These towers, be it within data center, network, cloud etc., have many roles defined which fit well with this approach. These become the first area of choice to create role-based automation

Standard software platform operations

Standard enterprise software platforms with respect to ERPs, CRMs, ecommerce etc., have many roles that are aligned to this approach. Standard operational activities are performed in each of these areas that can be transformed into an automated process.

Domain specific operations

There are multiple roles in every domain that have standard operating procedures that leverage technology for e.g. in manufacturing, the production process is managed through various technologies and there are human resources deployed to manage the same using these technologies. Such roles are mostly amenable to the idea of role-based automation.

Infrastructure tower operations

Step1: Identify activities of a role

One can follow the process shown in Figure 1 to come up with the list of activities to be included as part of the identified role.

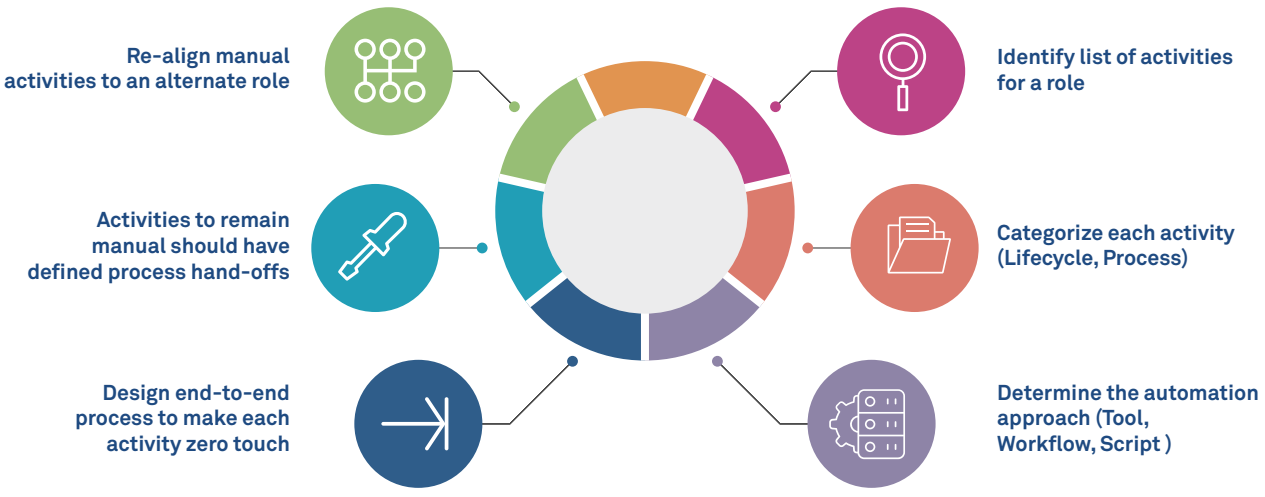

Figure 1: Process to identify activities of a role

Step 2: Create a solution blueprint

Once the activities are identified, the tools and technologies required to accomplish automation of the activities must be defined to create a solution blueprint.

The solution blueprint will provide the system architecture of how the various tools involved are integrated and what kind of technologies will be used to execute the processes involving the identified activities. Figure 2 shows an illustration of a solution blueprint for a Wintel L1 Admin role.

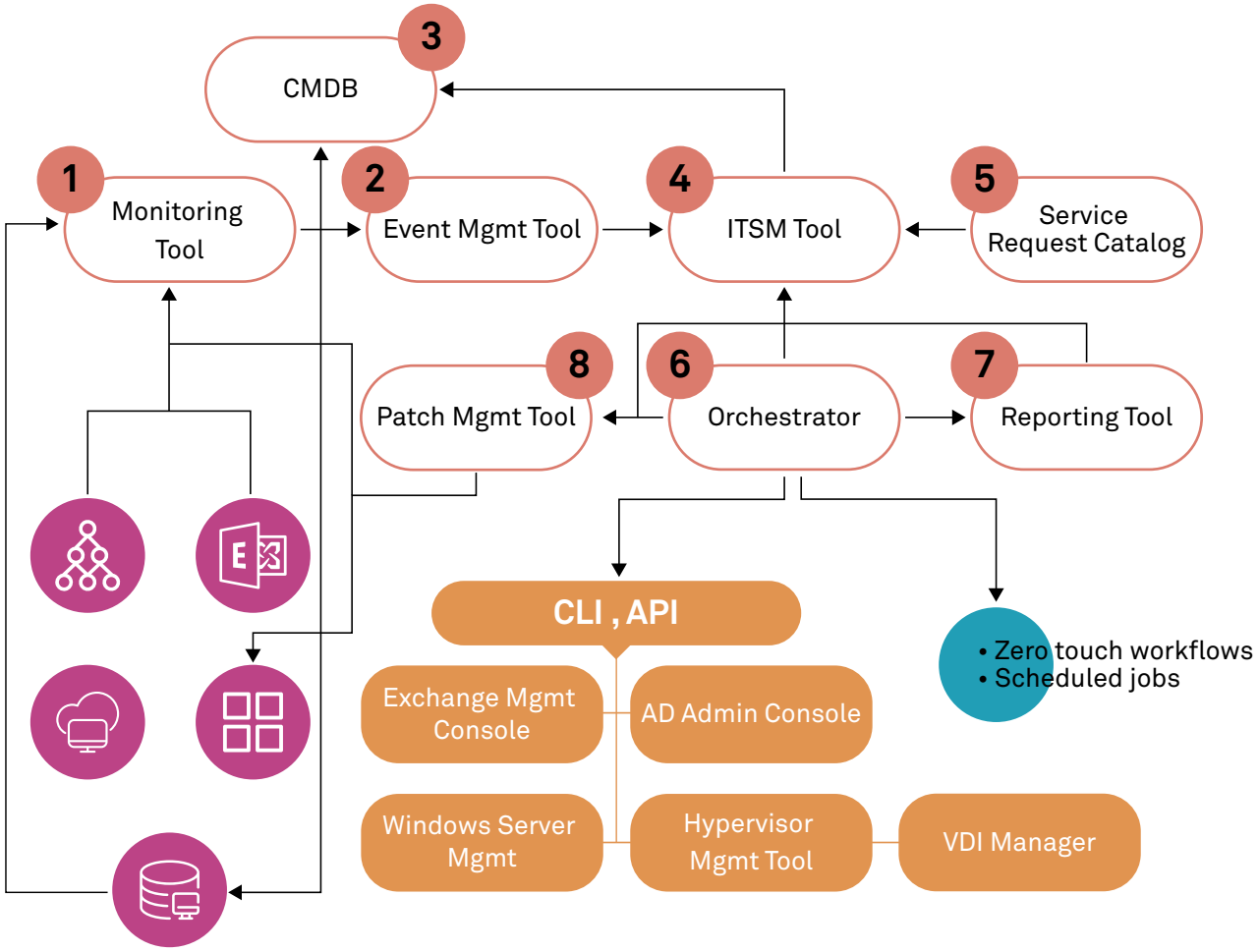

Figure 2: Illustration of a solution blueprint for a Wintel L1 Admin role

1. Maximize monitoring capability by introducing custom probes if required
2. Cross-domain event suppression and correlation to eliminate redundant alerts. Alert enrichment.
3. Accurate CMDB with CI relationships – auto-discovered / auto-updated
4. Incident creation and classification. Service request management
5. Form-based service request catalog for self-service capabilities to end-users
6. Orchestrator to trigger appropriate work flows to resolve tickets, run jobs at scheduled intervals, Integrate with target servers through established protocols, integrate with other tools to transfer data or trigger activities
7. Operational dashboards using system and process data
8. Patch management tool to manage patching related activities

Step 3: Create a solution package

Once the solution blueprint is created, build the solutions for each identified activity that works using the apt tools and technologies and executes the activity end-to-end without any human intervention. These solutions can be bundled together as a logical group that can be deployed as a package. Such solution packages can help in faster deployment and effective utilization of the solution. The bundling of the solutions can be done for each technology, either based on the process the solutions are part of, or based on the service lifecycle stage of the activities.

Figure 3 shows the various groups created for the Wintel L1 Admin role. The packages are created accordingly.

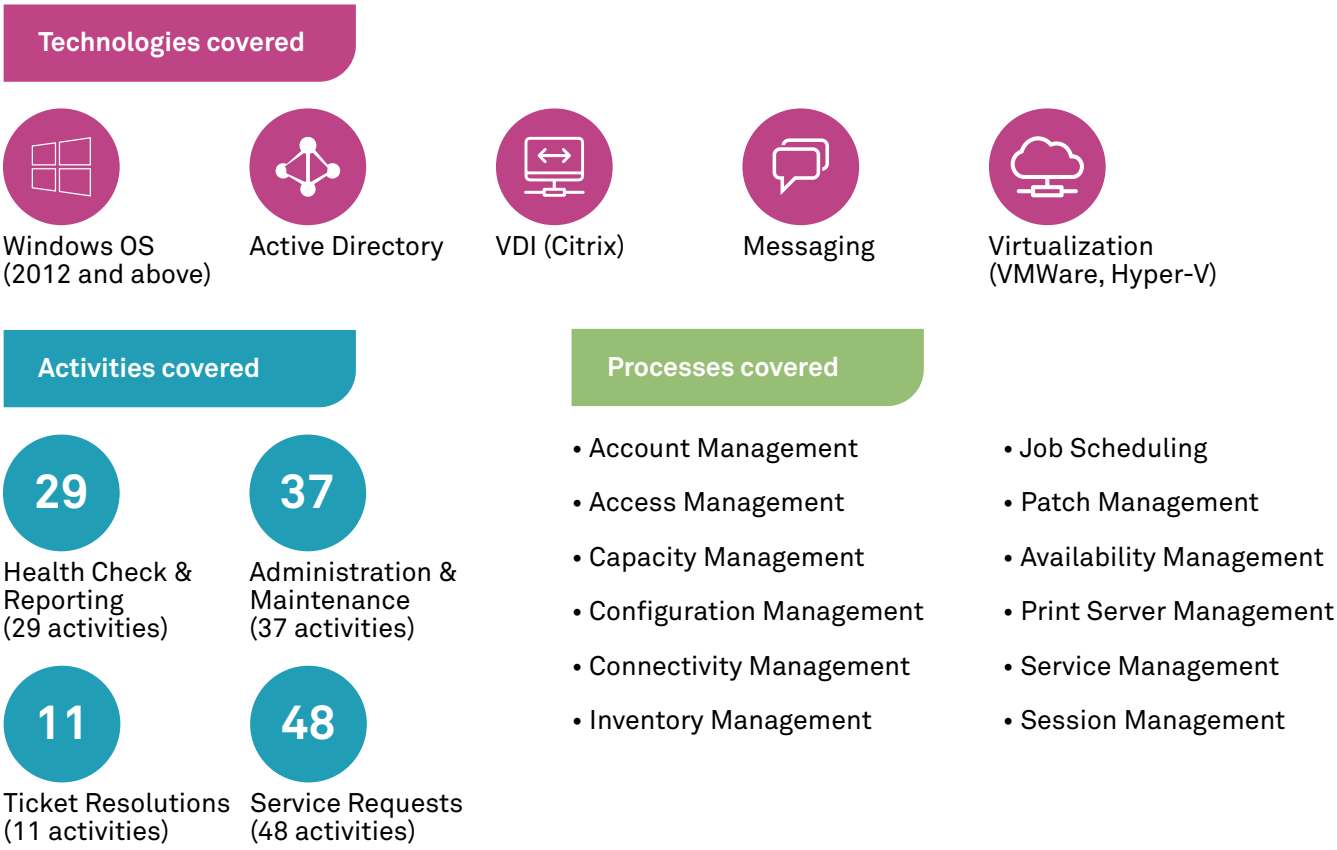

Figure 3: Groups created for the Wintel L1 Admin role

How to implement role-based automation

When it comes to implementing role-based automation, we need to be cognizant of the fact that the current landscape in the enterprise may not be fully ready to take up this journey. The enterprise has to go through a transformation to be ready for the future operational model comprising of a combination of human and digital personnel.
This will start with change in the mindset of the team on the ground to trust that tools and automation can do what humans do. It would help to have a tested framework to follow to take the enterprise through this journey. The approach to be followed in implementing role-based automation is given in Figure 4.

Figure 4: Approach to implement role-based automation

The most crucial part of this is to assess the technology landscape and identify the gaps that need to be covered for effective automation of the role. Addressing the gaps becomes an integral part of the implementation and has to be completed before implementing the automation. In order to do this, it is important to get all the stakeholders onboarded to the idea and work with them to make this happen.

Resilient future of operations with automation

As we move into the digital era, it is imperative that the dependency on tools and automation increases to keep the operations running. Adopting the approach of creating role-based automation and transforming the operations team to include digital personnel along with human personnel will help enterprises move towards this future state of operations with greater confidence. Human intelligence will continue to play a significant role in running operations by adding value in improving the performance through effective utilization of tools and automation.

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