This sample chapter answers the question: how do you maintain SAP S/4HANA Cloud? It discusses the quarterly release management cycle and ongoing maintenance tasks from report development to tile customization. Application services providers also are covered for those who want to outsource their maintenance efforts.

“Maintenance: How Do You Maintain SAP S/4HANA Cloud?”

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The Authors

Michael Jolton, Yosh Eisbart

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Chapter 5

Maintenance: How Do You Maintain SAP S/4HANA Cloud?

Cloud applications remove a great deal of the overhead required for maintaining a business software solution. That said, you still need to manage and extend the application and enable users to take advantage of the functionality that comes with new releases.

Because SAP S/4HANA Cloud is a relatively new solution, it’s being enhanced with new functionality as quickly as possible so that it ultimately will provide capabilities on par with the on-premise version (and eventually beyond the on-premise version). At the same time, new technology, like machine learning and digital assistance, is driving the need for an ever-increasing pace of innovation. Some innovations will be optional for users to accept, but others will be mandatory.

This innovation, however, cannot go unchecked. First, so that all SAP S/4HANA Cloud instances remain upgradable, any new innovations must be backward compatible with existing SAP Best Practices and configurations. Second, any bug released would affect all SAP S/4HANA Cloud customers at the same time, creating a potential nightmare for SAP. Finally, because the on-premise and cloud versions of SAP S/4HANA are built on the same code line, innovations must be coordinated between the two versions even though they’re on different release schedules.

Ongoing maintenance for SAP S/4HANA Cloud requires similar diligence in efforts to address enablement and adoption of new functionality and ongoing management of reporting and integrations. Further, because SAP provides quarterly innovations and releases for SAP S/4HANA Cloud, ongoing maintenance must be structured and repeatable.

This chapter will address the unique nature of application maintenance for SAP S/4HANA Cloud. Quarterly releases bring innovation and improvement, but they can also cause significant disruption for the business and for the IT staff who may be working on extensions, custom reports, and so on. Section 5.1 addresses creating a culture of change that embraces these releases as part of a new way of doing business. The
following sections address common ongoing maintenance tasks, beginning with report development in Section 5.2. Report management is fairly commonplace; there are, however, nuances to note when working within the SAP Best Practices framework. Unlike report management, tile management will be a new concept for application maintenance teams. Section 5.3 addresses how tiles that provide visibility into critical key performance indicators (KPIs) can be updated when KPIs change or are added. Section 5.4 then provides a high-level outline of integration management. Integrations are covered in Chapter 8, but it’s worth including the topic at a high level here to ensure it’s considered when planning maintenance. Not everyone who implements SAP S/4HANA Cloud will want to take on this maintenance effort, which is why considerations for outsourcing this work to an application services provider are provided in Section 5.5 to round out the chapter.

5.1 Quarterly Release Management

To keep pace with the demand for innovation yet keep the quality controls and governance that make SAP so reliable in place, SAP has implemented software manufacturing best practices with a predictable, quarterly release schedule for SAP S/4HANA Cloud (see Figure 5.1). Note that on-premise SAP S/4HANA will have major releases roughly every 11 months.

With change at this pace, a concerted communication and change management effort needs to be put in place. This section will address both the need for communication to help enable change and overcome potential barriers that are part of human nature, and the predictable cycle of change. SAP understands the need for this communication effort and properly arms SAP S/4HANA Cloud customers with multiple tools to help. Both internal communications and plans and SAP’s communications tools come into play in developing a release plan for the quarterly updates. With this combination of tools working together, quarterly updates will become the new normal for business operations, helping to minimize disruption and promote a culture of embracing change.

5.1.1 Communicating with Users

With SAP S/4HANA Cloud, business users no longer need to wait for overtaxed and understaffed IT departments to deliver needed features and functions at the pace of business. However, with new releases being delivered quarterly, this dream come true for the business has the potential to become a nightmare if communications aren’t managed correctly. One reason for this concern is that any given company that uses SAP S/4HANA Cloud may not ask for nor want to make use of specific innovations. Conversely, business users may become frustrated to find that new and desirable capabilities were released, but they weren’t made aware of these new features or enabled to use them. Ultimately, the fact is that business users are being exposed to change every three months, and with that change comes a predictable cycle of change adoption that must be accepted and proactively addressed, lest the change be rejected.

Figure 5.2 depicts the typical change acceptance cycle for business users. With little communication, users can quickly turn from viewing an IT change with “uninformed optimism,” when little is known about the change but expectations are high, to viewing it with deep pessimism (the “valley of despair”), when unmanaged expectations are met with doubt and concern that the change is bad for the business or not sustainable.

The answer to these concerns is a communication plan that meshes with SAP’s release plan in terms of schedule and rigor. Communication and acceptance of business user doubt will help raise confidence and eventual acceptance of the change. To be effective, this communication must be coordinated and enacted in a fashion that becomes predictable to the audience.
A communication plan will assist greatly in coordinating and controlling messaging around new releases. A successful communication plan will be developed across two dimensions: timing and audience.

From a timing perspective, the communication plan needs to address the following four major phases (as shown in Figure 5.3):

- **New release awareness**
  Even after a year or more of quarterly releases, business people get caught up in the whirlwind of business and need to be reminded about upcoming business disruption. Procedural communications to end users and management should include the following:
  - Highlights of the upcoming release (e.g., business areas affected, including functions that will be enhanced, new functions that will be provided, new technical capabilities)
  - Release timeline (including review/testing and training)
  - Sources (e.g., web links) for relevant release information
  - Expected downtime
  - Scheduled jobs and reports that will be temporarily paused and restarted
  - Reminders to ensure that mission-critical items (e.g., requiring employees to complete a process) aren’t due on the same date as the release

- **Prerelease review/testing**
  Although each SAP S/4HANA Cloud release will be fully tested by SAP prior to release, review of the new functionality using company-specific data—especially for commonly used applications that receive enhancements or applications that have in-app extensions—will both confirm the enhancements work with company data and assist in developing testing and other prerelease communications. In addition, any integrations that could be affected should be regression-tested to confirm there are no issues. End user communications for this phase should include the following:
  - Specific details about features that will be/were tested (to help build confidence in the new release)
  - Test results, especially noting any concerns that will need to be addressed (note: it’s not only okay to be open about concerns, but also highly preferred; users will gain confidence that changes are being managed to allow them to stay productive)

- **User enablement**
  Communications for this phase are provided to fully enable users to make use of enhancements and new innovations. The specific communications depend on the nature of the innovations and the level of end user sophistication. Communications for different levels of end user sophistication should generally include the following:
- Detailed documentation on innovations for sophisticated super users (note that if this information isn’t provided, end users will spend valuable time looking for it anyway)
- Web videos or high-level documentation to self-sufficient (but not super-) users
- Classroom training tailored to company specifics, to supplement the high-level documentation for dependent end users

Note that during this phase, user attitude to change must be considered for determining the nature of specific communications and the specific medium and communicator. User attitudes can be classified as follows:
- **Supporters** should be leveraged for communicating change (having business supporters will always help drive overall confidence and acceptance).
- **Neutral** users should be involved and educated with the goal of converting them to supporters.
- **Detractors** are a reality and should be accepted as a good and necessary part of a team to prevent groupthink. When working with detractors, listen to and address concerns as best as possible, with the goal of neutralizing attitudes by providing facts about the change (but not in the hope of converting them to supporters).

User attitude assessment can be captured in a worksheet, such as the one in Figure 5.4.

Figure 5.4 Business User Assessment Form

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**Postrelease Support**

Once the new release is live, there should be some follow-up with users to make it clear that they aren’t alone and to ensure the application is working as expected (i.e., to confirm that the testing was comprehensive and successful). In general, communications should include the following:

- One-on-one or group meetings, or a mass email to which recipients can reply, occurring shortly after the release to gather feedback about both the release and the overall communication process
- Any identified issues that are to be addressed and, if possible, the timeline and/or approach for addressing them

Regardless of communication phase, the audience for communications should always be considered and calculated as part of the overall communication plan. As previously mentioned, user sophistication will impact the type of user enablement communication. At the same time, employee roles should also be considered. Management and executive levels primarily need to know timelines and business benefits to be expected, whereas users require much more detail. Functional roles also need to be considered. Financial team members, for example, don’t need to be informed at a detailed level about manufacturing floor changes (although they may benefit from high-level overviews for functions that could impact financial processes and/or financial data either upstream or downstream).

Figure 5.5 provides an overarching communication plan example.
5.1.2 SAP Communications

SAP is fully aware of the requirement for frequent and varied communications and has assembled a comprehensive set of tools for SAP S/4HANA Cloud customers. From high-level overviews to videos to detailed release notes, all application-specific information from SAP is made available at www.sap.com/product/enterprise-management/s4hana-erp/ (see Figure 5.6). It’s important to note that SAP provides information for the current release and the roadmaps for the next three releases (basically, a year of release information) and updates the information with each quarterly release.

Figure 5.6 SAP S/4HANA Cloud Release Information Sources

<table>
<thead>
<tr>
<th>Highlights</th>
<th>Details</th>
<th>Operations</th>
<th>Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP S/4HANA Cloud 1702</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Release Information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The SAP S/4HANA Cloud 1702 release in Q1 2017 delivers innovations across different lines of business that enable our customers to carry out their digital transformation more quickly and to make their business processes more efficient through increased transparency, automation, and quality.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Release overview video</td>
<td>SAP S/4HANA Cloud 1702 product scope</td>
<td>Announcement SAP Community Network</td>
<td>What’s new</td>
</tr>
<tr>
<td>Experience Release Innovations:</td>
<td></td>
<td></td>
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<tr>
<td>Integration to Cloud</td>
<td>Integration to ZTP capabilities</td>
<td>Integration to SAP Cash Application</td>
<td></td>
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<tr>
<td>SAP Best Practices Information:</td>
<td></td>
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<tr>
<td>Roadmap:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation Discovery</td>
<td></td>
<td></td>
<td>SAP S/4HANA Cloud roadmap</td>
</tr>
</tbody>
</table>

5.1 Quarterly Release Management

It’s important to review the available SAP documents and videos and then populate the communication plan accordingly.

Along with information about innovations, SAP provides details about release schedules and potential downtime. Releases are made available in a single wave, and the Q environment release precedes the P environment release by two weeks (see sample release schedule in Table 5.1; note that actual dates are subject to change).

| SAP S/4HANA Cloud Upgrade Calendar Sample |
|-----------------------------|------------------|-----------------|-----------------|-------------------|
| Release | 1702 | 1705 | 1708 | 1711 |
| Wave 1 | Q system upgrade | Feb. 18–Feb. 19 | May 13–May 14 | Aug. 12–Aug. 13 | Nov. 11–Nov. 12 |
| | P system upgrade | Mar. 4–Mar. 5 | May 27–May 28 | Aug. 26–Aug. 27 | Nov. 25–Nov. 26 |
| Wave 2 | Q system upgrade | Feb. 25–Feb. 26 | May 20–May 21 | Aug. 19–Aug. 20 | Nov. 18–Nov. 19 |

Table 5.1 Sample SAP S/4HANA Cloud Upgrade Calendar

The maintenance windows for regular maintenance and upgrades are available in and subject to the SAP service level agreement for cloud services. To find these windows, go to https://www.sap.com/about/agreements/cloud-services.html, then search for “service level agreement”. As of the time of writing, the maintenance windows are as follows:

- **Regular maintenance:** Weekly, from Sunday at 2:00 a.m. to Sunday at 6:00 a.m. local time
- **Major upgrades:** Up to four times per year, from Friday at 10:00 p.m. to Monday at 3:00 a.m. local time

During a maintenance window, users who try to access SAP S/4HANA Cloud will see a screen like the one shown in Figure 5.7.
5.1.3 Enabling New Releases

One of the primary steps of ongoing maintenance is the enabling of new releases. Note that during the initial implementation, after the Q system is up and running, the starter system is disabled and no longer available. As a result, there are only two systems to upgrade: the Q system and the P system. As with an on-premise application, the Q system is used for testing the new release; once it’s tested, the P system can be upgraded to the new release.

A typical upgrade process might follow the high-level plan in Figure 5.8.

Before any upgrade begins, it’s important to review the new solution scope related to the latest quarterly release. SAP’s release notes provide overviews of the new scope in the What’s New section of the product help documentation. This documentation will list both new functionality and existing functions that have been enhanced. Note that you can focus on new functionality by searching for “scope” and locating scope items with a New status.

As in the fit-to-standard process, the new scope items can be reviewed by utilizing the associated SAP Best Practices process models and test scripts. Because the model system data isn’t in the Q system, test scripts must be modified to match company data to be tested. Going through the prerequisite steps in the test scripts will help identify any building block master data that needs to be set up to support the new functionality. With prerequisite data loaded and updated test scripts, the tests can be run, allowing key business users to review functionality.

Test scripts should be managed within the Manage Test Processes app (see Figure 5.9).
Tip
Any scope item cannot be deactivated once activated.

Assuming the scope item is desired—or is mandatory or an already active scope item being enhanced—business users can execute the test plans to identify gaps that will need to be addressed with master data, extensions (or removal of extensions), or process work-arounds. Note that before any extensions are planned, key business users should review the roadmaps for the next three upcoming releases to see if any or all of the identified gaps may be slated to be addressed by SAP.

Activation of scope items isn’t automatic; it must be requested via an incident report. Customers can make a single request for activation of all new scope items or can select specific scope items to be activated. Note that any new scope items must be activated in the Q system prior to being activated in the P system, and activation in the P system must occur within two weeks of activation in the Q system (ideally following a plan similar to the one discussed previously). Finally, it’s important to note that the Q system and P system configurations (i.e., active scope items) must always match.

5.2 Report Development

Even though businesses are employing more and more digital technology in nearly every aspect of operations, paper reports and forms are still necessary and business users, in general, are continually generating new requirements for paper documents. Some reports are required to support internal analysis or meetings. Some reports or forms are required to conduct business with vendors or customers without digital or integrated data systems. Regardless of the rationale, report and form development is an ongoing maintenance task.

Before developing new reports (or modifying existing reports), it’s good to review the list of standard reports and forms. This list is located under the Accelerators tab within the SAP Best Practices Explorer, as shown in Figure 5.10.

![Figure 5.10 SAP Best Practices Accelerators for Reports and Forms](image)

For maintenance activities for reports and forms, because the company has already been through implementation, it’s very likely that some of the SAP Activate tasks have already been undertaken, so this work shouldn’t be new to the maintenance personnel. Ideally, the external systems required for reporting and forms (i.e., Cloud Print Manager and Adobe Livecycle Designer) will already be downloaded and initialized. From there, the forms adaptation and output management deliverable in the realize phase of SAP Activate contains the necessary tasks for creating and updating reports and forms. The process flow (shown in Figure 5.11) can also be found under the output management (1LQ) scope item in SAP Best Practices.
The process begins with downloading form templates from the Maintain Form Templates app (see Figure 5.12). By starting with the templates, customized reports and forms will have a common look and feel, enhancing readability and therefore productivity.

Figure 5.11 Output Management Process Flow

Modifying and developing custom reports and forms should follow a standard and predictable schedule, akin to the quarterly release schedule. A structured process should be in place for making requests, having a steering committee or key user group review the requests to confirm and/or modify the requirements, and development and release of the new or updated reports and forms. Timing for releases can be in conjunction with quarterly upgrades, staggered in between quarterly upgrades, or set up to follow a more aggressive release cycle, such as every two weeks. The critical point is that releases be consistent and be accompanied by proper communications.

5.3 Tile Customization

In addition to providing entry to applications, tiles provide critical KPIs for business users. These KPIs give immediate and critical insight into ongoing operations. Because the needs for different apps change and because KPIs can change, tiles and their use should be maintained actively.

Creating tiles is addressed in Chapter 7. KPI tile maintenance follows a similar process, starting with the KPI Workspace app. Typical tile maintenance will likely include the following:

Figure 5.12 Maintain Form Templates
Changing the KPI name
Changing the goal settings for the KPI (e.g., due to improved performance, an acceptable minimum bar may be raised or acceptable maximum lowered)
Changing other evaluation settings (filters, comparisons, etc.)
Creating completely new KPIs

Once created and used, KPIs can’t be edited; they must be copied and modified, should business needs dictate, by going into the KPI workspace.

In addition to maintaining KPI tiles, business users may want assistance changing tile groupings or showing or hiding tiles. Although this process is very intuitive and user-friendly, business users may still hesitate to undertake it.

Tiles management requires the analytics specialist business role and starts with the Create Tile app (shown in Figure 5.13).

In addition to developing and modifying custom tiles, tile maintenance also includes managing tiles for new and enhanced apps with the quarterly releases. First, it’s necessary to ensure new tiles are properly enabled and visible to relevant users. Because new apps are part of an SAP Fiori catalog, that catalog must be associated with the security role assigned to the user; conversely, the user must be assigned to the new security role. The Maintain Business Roles app (see Figure 5.14) lets you view the various business roles, all assigned users to a role, and all related catalogs.

When a new app is added during an upgrade, it can be added to an existing business catalog or a new business catalog. In the case of a new business catalog, an administrator will need to create the necessary associations and security role changes (see an example of adding business catalogs in Figure 5.15).

Once the security role adjustment is made, the user will need refresh his or her SAP Fiori launchpad to confirm that the tile is visible. If it isn’t, the user will need to open his or her user profile from SAP Fiori launchpad, edit his or her home page, open App Finder (see Figure 5.16), locate the new app, and pin it to the appropriate grouping on his or her home page.
The decentralized nature of this maintenance requires significant communication and training to ensure users don’t become frustrated. Because users can update their tiles and SAP Fiori launchpad layouts, a healthy maintenance practice would also include periodic spot reviews of specific users to ensure they’ve optimized their SAP Fiori launchpads.

5.4 Integration Management

Verifying any integrations is critical in the testing phase of a new release. Because SAP requires integrations to use approved APIs, there is a limit to the risk of integrations breaking due to one of the quarterly upgrades. Regardless, it’s still important to test integrations.

The very nature of integrations, however, demands that both source and target systems be monitored for changes. As a result, integration testing may need to take place on a different schedule than the quarterly upgrade schedule should the non-SAP system change.

In addition to testing for functionality, integrations should be monitored or spot checked for performance. The Q system environment allows for such testing without disturbing ongoing business.

5.5 End User Support via Application Management Services

As you can see, even though SAP S/4HANA Cloud doesn’t require the hardware, networking, systems software/database, and other maintenance associated with on-premise applications, it does still require active ongoing management. Companies looking to eliminate the cost of maintenance need to temper that goal with optimizing the cost of application maintenance. This cost optimization can become tricky when less than a full-time employee or FTE is required for the application maintenance (as is often the case with SAP S/4HANA Cloud). When there isn’t additional work available to keep an FTE busy, SAP S/4HANA Cloud customers may want to consider outsourcing maintenance to an AMS provider. AMS providers can capture economies of scale by providing maintenance services to multiple customers.

Outsourcing to an AMS provider must not be taken lightly and offered to the lowest bidder, however. Critical AMS aspects to consider include the following:

- **Strong communications program**
  Much of maintenance is communication. Unlike for customizable on-premise applications, technical skills become commoditized, because sophisticated config-
uration isn’t required. Being able to handle communications properly to manage user expectations and acceptance is the real and differentiable skill required, however.

**Strong business acumen**

Like communication skills, business acumen is required to assist users in identifying ways to use apps and eliminate reports and poor processes. It’s also needed to assist users in defining optimal SAP Fiori launchpad layouts and creating tiles that provide useful information at a glance.

**Continually updated SAP S/4HANA Cloud knowledge**

Because updates are released quarterly, AMS providers need to be fully aware of all enhancements and the product roadmap. Specialization in the application becomes a requirement for success.

**Holistic SAP Cloud Platform skills**

When integrations and side-by-side extensions are part of an environment, the AMS provider must also be properly skilled in SAP Cloud Platform to be able to maintain those applications. Thus, there are some technology skills that aren’t commoditized, but they’re limited to this arena.

If these aspects are in balance, AMS providers can be assessed for cultural fit across the companies. AMS providers are day-to-day business partners, not just vendors. They should be selected with due consideration and managed as team members.

### 5.6 Summary

As you’ve seen, even though SAP S/4HANA Cloud removes a significant amount of maintenance overhead (with respect to hardware, databases, and much more), a great deal of attention is still required to ensure consistent adoption of innovations and optimized use through tailored reports and tiles. In addition, because this is the digital core of a business, there likely will be integrations that must always be maintained. Although preconfigured and residing in the cloud, SAP S/4HANA Cloud is still an ERP platform woven throughout the daily life of a business and affects many, if not most, of its employees. As a result, ongoing maintenance can’t be an afterthought; it must be approached with due attention.

This chapter addressed maintaining the solution. The next chapter will move on to the business functionality provided in the solution.
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Michael Jolton is the vice president of service delivery at NIMBL and the leader of its SAP S/4HANA Cloud practice. Throughout his career, Michael has helped clients develop and implement ERP strategies, and he is now applying those experiences to helping clients evaluate and implement SAP S/4HANA Cloud. Michael received his MBA in Finance from the University of Wisconsin-Madison.

Yosh Eisbart is the CEO and co-founder of NIMBL, an award-winning Denver-based SAP consulting firm. Yosh has helped NIMBL grow into one of North America’s most respected SAP technology firms; it has received local and national awards and serves both Fortune 1000 companies and midmarket firms.

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