

KDD026 - SAP S/4HANA Deployment Model

Status	Approved
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Issue

As the ERP Rebuild project evaluates its deployment for future-state SAP S/4HANA, the decision between utilising a public cloud, private cloud, or on-premises deployment options, on which to build business capability, is a critical consideration. This document will provide a clear concise comparison of the three primary options and recommendation on how to deploy S/4HANA.

Recommendation

SAP S/4HANA Private Cloud Edition (PCE) is the recommended deployment option for S/4HANA. This is referred as Option B) in this document.

While the charter principles of Simplification, Standardisation, and Adopt/Adapt seemingly align closely with the principles of SAP's public cloud offering, the primary reason for not choosing the Public Cloud option is the significantly reduced functionality offered by this deployment model, and the limited extensibility options. As a result, it is not clear that Syensqo's objectives of business process standardisation and simplification can be attained using such a constrained IT system. Hence choosing a simple, standard deployment model for a core IT system could jeopardise the more important business outcomes being sought by the ERP Rebuild program.

Background & Context

In recent years SAP has been marketing and constructing its product offerings towards cloud subscription models in order to become a 'Cloud' company. For SAP S/4HANA core systems the product offerings include SAP S/4HANA Public Cloud, GROW with SAP, SAP RISE and Private Cloud Edition, each of which offer varied configurations customers may consider. Broadly speaking these models are either **public**, **private** or **on-premise** options thus this KDD is narrowed down to option A) SAP S/4HANA Private Cloud Edition (PCE), option B) SAP S/4HANA Public Cloud or option C) On-Premise. For the purpose of this KDD Private cloud edition can be also considered as an SAP RISE construct, however SAP RISE or PCE will have its own consideration with its own pros and cons beyond the scope of this document.

Public Cloud Considerations

SAP S/4HANA Public Cloud, with its benefits of low-touch maintenance and standardised business processes, presents a simple and straightforward solution. However, for a global chemicals company like Syensqo, the realities of running a scaled operation with multinational compliance obligations and potential for future acquisition/divestments challenge the viability of this option in its current offering from SAP. While SAP S/4HANA Public Cloud offers cost efficiency, the need for enhanced security, additional compliance, and control over Syensqo data favours the SAP S/4HANA Private Cloud Edition. Additionally, SAP S/4HANA Private Cloud Edition provides flexibility in project deployment options, allows Syensqo to determine its own schedule for maintenance and adoption of new technologies and business capabilities (such as generative AI), that are rapidly emerging and will advance during the lifecycle of the ERP Rebuild program. Changing position on capabilities through deployment lifecycle is a likely scenario that is not supported under the constraints of SAP S/4HANA Public Cloud.

Finally, SAP S/4HANA Public Cloud is generally used for new greenfield deployments, especially for emerging companies without significant standing investments in SAP solutions. Given Syensqo's extensive implementation of SAP dating back to 2001, transitioning to SAP S/4HANA Public Cloud is not feasible. Our existing infrastructure and substantial investments in on-premises SAP solutions necessitate a tailored approach that ensures advancement in business capability that leverages on existing deployed assets and Syensqo IP.

On-Premise Considerations

On-Premise purchasing option is in the past a traditional approach to acquiring licenses for SAP software. In terms of comparison this option is very much aligned with the recommended Private Cloud option, with the notable variance in outcomes are:

1. Ultimate accountability is with Syensqo to own, operate and manage the solution
2. At the end of the support period for the acquired licenses Syensqo have optionality to extended maintenance fees, upgrade to the latest software (acquire licenses) or take the solution 'out of support' with a third party or self-managed landscape
3. CAPEX purchasing model with limited discounting due to SAP's push for cloud adoption and unwillingness to negotiate on legacy licensing constructs
4. Cloud infrastructure would be acquired to support the platform and is purchased independently to the licenses
5. SAP have indicated that the on-premise edition of software may not receive future functionality as it focuses its product development on cloud based offerings

On-premise is in many ways aligned with key requirements of Syensqo, however going ahead with this option is to be considered somewhat an 'alternative' solution considering SAP's strategic intent with Cloud based offerings. As such PCE remains the preferred choice on the assumption that the negotiated outcome fulfils the flexibility, agility and cost imperatives being considered.

Assumptions

1. **No on-premise data center**
Building an on-premise data center with a perpetual license model is out of the question due to there being no indicators that this would be a preference and ERP Rebuild charter alignment and Syensqo goals means building a modern future-proof solution which aligns with cloud.
2. **Requirement to support intentional but disruptive events**
As commonly indicated by executive leadership, Syensqo will at some point undergo mergers/acquisitions/divestments in its future, possibly even during the ERP Rebuild project lifecycle. These events will have demands and requirements to integrate or onboard / off-board organisational units with speed and flexibility.
3. **No product deviation from SAP**
SAP do not alter their product offerings so significantly in the time period between this decision and securing a license to operate that the recommendation becomes invalid.
4. **Uptime and Problem Resolution**
SLAs for availability and support offered through products considered will meet Syensqo's requirements
5. **Cost Control and Vendor Lock-in**
Ensuring the power dynamic does not shift heavily in SAP's favour while transitioning to a cloud subscription model is a critical non-functional requirement
6. **Portioned (hybrid) adoption of public cloud overly complex**
The option to move some business capabilities that are very 'vanilla' into a public cloud offering and operating more complex parts of the business into a private cloud construct would lead to undue complexity to operate and maintain.
7. **SAP Negotiations Conclude Positively**
SAP negotiations involve give and take and some aspects of securing the Private Cloud option may involve forgoing some preferred requirements of Syensqo. It is possible that some aspects may become deal breakers that take us to an alternative outcome, particularly those around cost and alignment in terms of servicing of flexibility and agility.

Constraints

1. SAP are heavily pushing cloud adoption to its customers, thus reducing negotiation leverage for on-premise perpetual platform model
2. Vendor lock-in to SAP and cost control become an increasing challenge under any cloud platform model
3. The decision must be made early, during the conceptual design phase, to advance the ERP Rebuild agenda and secure a favourable outcome. This early decision-making will prevent SAP from perceiving a commitment to their products, and thus improve negotiation leverage on license costs for Syensqo.

Impacts

At inception of the ERP transformation project, now is the only point in time it is feasible to consider starting fresh with a public cloud option. With the decision to move forwards with SAP S/4HANA Private Cloud Edition will restrict the viability of changing direction in the future. Once acquired and deployed the feasibility to change course and pursue a public cloud solution becomes unwieldy, the same (but to a far lesser extent) goes for a reversal to an on-premise based model.

To a large degree opting for a bundled service and software subscription as defined with PCE (or SAP RISE), defines the IT Organisational structure to center its operations around ticket handling and vendor SLA management vs. having a direct operational responsibility for the platform.

Business Rules

N/A - The SAP platform serves as a solution to operate business requirements, it should not have influence on business rules.

Options considered

Option A: SAP S/4HANA Public Cloud

- **Deployment:** Core ERP system in a multi-tenant cloud environment aka 'public cloud'.
- **Customisation:** Minimal level of customisation, expects highly standardised deployment.
- **Management:** Fully managed by SAP, including infrastructure, software updates, maintenance, and security.
- **Focus:** Standardised processes and configurations to ensure ease of use and consistent updates.

Option B: SAP S/4HANA Private Cloud Edition

- **Deployment:** Private cloud environment.
- **Customisation:** High level of customisation, similar to on-premise capabilities.
- **Management:** Managed by SAP partner, including infrastructure, updates, and patches.

- **Focus:** Primarily focused on providing a dedicated SAP S/4HANA environment with flexibility in customisation and control over updates and management.

Option C: SAP On-Premise

- **Deployment:** IaaS cloud environment or Private Data Center (i.e. on-premises or co-located hosting)
- **Customisation:** High level of customisation, complete product deployment control to the limit of generic SAP supported configurations.
- **Management:** Full stack accountability by Syensqo with mix and match management options which can be divided across platform components. For example, Vendor A for Infrastructure, Vendor B support SAP Basis and Syensqo support functional components or Syensqo may fully outsource or fully insource.
- **Focus:** Primarily focused on maximum ownership of Syensqo to control their roadmap without having 'cloud' requirements infringe on their deployment.

Evaluation

	Option A - SAP Public Cloud	Option B - SAP Private Cloud	Option C - On-Premise
Functional Fit	➖ Con Limited functionality available. In some cases, functionally-complete but dated solutions from SAP are not available in Public Cloud, and replacements are not yet functionally complete (e.g. Product Compliance, EHS). Some core Finance processes have functional deficiencies, such as supporting fewer currency types in the general ledger.	➕ Pro Full functionality of S/4HANA available, including technically deprecated functions and SAP Compatibility Scope items.	➕ Pro Full functionality of S/4HANA available, including technically deprecated functions and SAP Compatibility Scope items. ➖ Con SAP announced in July 2023 that some innovations may not be available for on-premises deployments of S/4HANA
Vendor Lock-in	➕ Pro Streamlined, single vendor management, integrated SAP services. ➖ Con High lock-in due to reliance on SAP's managed environment.	➕ Pro Syensqo have ultimate control over the solution and its implementation	➕ Pro Syensqo have ultimate control over the solution and its implementation
Security and Compliance	➖ Con Limited control over data residency and governance.	➕ Pro Syensqo have greater control over implementing our own security measures and compliance policies to suit international regulations.	➕ Pro Syensqo have greater control over implementing our own security measures and compliance policies to suit international regulations.
Data Residency	➖ Con Managed by SAP, simple compliance with global data regulations	➕ Pro More options for data residency, better for Syensqo's work in highly-regulated industry.	➕ Pro More options for data residency, better for Syensqo's work in highly-regulated industry.
Regulatory Compliance	➖ Con Add-Ons such as NextLabs Dynamic Access Enforcer used by Syensqo to ensure compliance with various export controls (EAR, ITAR, EU/UK Dual-Use controls) is not possible to be deployed in S/4HANA Public Cloud ➖ Con Reduced number of regulatory compliance reports; as of July 2024, of the 333 compliance reports and processes shipped by SAP in S/4HANA Private Cloud for countries relevant to Syensqo, only 232 are available in S/4HANA Public Cloud.	➕ Pro Due to the single-tenant nature of S/4HANA Private Cloud, it is possible to deploy SAP-certified add-ons such as NextLabs Dynamic Access Enforcer ➕ Pro The largest-possible set of compliance reports is available.	➕ Pro Syensqo owns the entire technology stack and is thus able to install add-ons such as NextLabs Dynamic Access Enforcer ➕ Pro The largest-possible set of compliance reports is available.
Cost	➕ Pro Predictable subscription fees, lower initial investment. ➕ Pro Semi-automatic upgrades without technical effort.	➖ Con Higher total cost of ownership, due to requirements of Syensqo	➖ Con Higher upfront CAPEX cost, due to not adopting subscription model for procurement.
Customisation	➖ Con Limited customisation options as only allowlisted, published APIs can be used to extend functionality. Custom development is curtailed, potentially limiting the ability to support Syensqo business and regulatory requirements.	➕ Pro Supports customisations for Syensqo specific needs and industry requirements.	➕ Pro Supports customisations for Syensqo specific needs and industry requirements.
Performance	➖ Con Optimised for average customer performance needs, managed by SAP.	➕ Pro Performance requirements are tailored and configurable by Syensqo	➕ Pro Performance requirements are tailored and configurable by Syensqo
Future Proofing	➕ Pro Frequent scheduled updates with the latest features supported on public cloud	➕ Pro Controlled and planned upgrades according to Syensqo's timeline.	➖ Con SAP have made references to developing future capabilities to

			certain 'Cloud' subscription models only. e.g. Green Ledger, AI features.
Operational	 Pro SAP have full accountability to support and maintain the platform.	 Pro SAP or SI have accountability to support and maintain the platform	 Con Syensqo remain accountable for the entire management of the SAP solution.
Platform Supports Approved KDDs	 Con WM: recommendation from KDD on Future-proof Warehouse Operations not supported.	 Pro On Premise or running SAP S/4HANA Cloud, private Edition	 Pro On Premise or running SAP S/4HANA Cloud, private Edition

See also

[SAP Primary Documentation for Public Cloud](#)

[SAP Primary Documentation for Private Cloud](#)

SAP documentation on 'Supported Compliance Tasks by Country/Region' for [S/4HANA Private Cloud](#) and [S/4HANA Public Cloud](#). A simple Excel comparison using data as of 30 July 2024 is attached:

File	Modified
Microsoft Excel Spreadsheet List_of_Supported_Compliance_Tasks_Comparison.xlsx	Jul 31, 2024 by WENNINGER-ext, Sascha
PDF File Workspace Mail - Fwd_ FOR APPROVAL - KDD - S4 Hana Cloud vs On premise.pdf	Sept 12, 2024 by FALL-ext, Cheikh

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Change log

Version	Published	Changed By	Comment
CURRENT (v. 29)	Aug 07, 2024 13:21	WENNINGER-ext, Sascha	
v. 28	Jul 31, 2024 10:53	WENNINGER-ext, Sascha	
v. 27	Jul 31, 2024 10:52	WENNINGER-ext, Sascha	
v. 26	Jul 31, 2024 10:51	WENNINGER-ext, Sascha	
v. 25	Jul 31, 2024 10:47	WENNINGER-ext, Sascha	
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v. 23	Jul 30, 2024 12:05	WENNINGER-ext, Sascha	
v. 22	Jul 30, 2024 08:13	DA VINCI-ext, Daniel	
v. 21	Jul 30, 2024 08:07	DA VINCI-ext, Daniel	
v. 20	Jul 30, 2024 05:20	WENNINGER-ext, Sascha	

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Workflow history

This view shows the 5 most recent entries. The complete workflow log is available from the 'Document Activity' menu item.

Aug 23, 2024	Actor	Type	Activity	Version
Approved	WENNINGER-ext, Sascha	State	changed state to Approved at 9:50 am	v29
Pending SteerCo Review	WENNINGER-ext, Sascha	State	gave <i>Final Approval</i> approval at 9:50 am	
			Approved by Frank Bolata 23 August 2024	
		State	changed expiry date to '06 Sept, 2024 09:50 am' at 9:50 am	
		State	changed state to Pending SteerCo Review at 9:50 am	v29
Pending Stakeholder Review	WENNINGER-ext, Sascha	State	gave <i>Stakeholder Review</i> approval at 9:50 am	
			Endorsed by Owen Pettiford after discussion with IT	
Aug 07, 2024				
	WENNINGER-ext, Sascha	Edit	updated the page at 1:21 pm	
		State	changed expiry date to '14 Aug, 2024 11:22 am' at 11:22 am	
		State	changed state to Pending Stakeholder Review at 11:22 am	v29
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			aligned title	
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