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White Paper
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SAP Commerce Cloud v(x)

To make the most of your data and become an intelligent enterprise, you need your data sources to be connected and integrated. SAP is very fast in moving its services from on premise (SAP Hybris) to private cloud (CCv1) and now to public cloud (CCv2). This white paper provides an overview of CCv1 and CCv2 and attempt to study the changes which we can expect in the future releases of CCv2.

February 13, 2019

Overview

To make the most of your data and become an intelligent enterprise, you need your data sources to be connected and integrated. SAP is very fast in moving its services from on premise (SAP Hybris) to private cloud (CCv1) and now to public cloud (CCv2). This white paper provides an overview of CCv1 and CCv2 and attempt to study the changes which we can expect in the future releases of CCv2.

CCv1 is hosted in SAP data center. Each of the environments (DEV/QA/Stage/Prod) contain at least one each of server types: Web servers, app servers, Solr, and Hana Data base server.

CCv2 is hosted in public cloud (Microsoft Azure and is using Kubernets for automating application deployment and scaling management. The database is Microsoft Azure SQL Db which is provided as a service from Azure cloud.

The obvious major change in CCv2 is in the infrastructure. By moving to a public cloud, we will gain the benefits below:

CCv1 Private Cloud	CCv2 Public Cloud
In CCv1, deployments to staging and production environments require making service requests to SAP (Time consuming)	Customers or partners can create new builds and deploy them to all environments in an automated way.
There is no support for building a continuous integration (CI) pipeline to stage or prod environments.	High degree of automation in build framework
There is no direct access to Hana database in CCv1. Setting up a local environment is cumbersome	CCv2 is using SQL Azure, database as a service. Setting up a local version for developers would be easier

CCV2 specific features releases are

Cloud Hot Folders

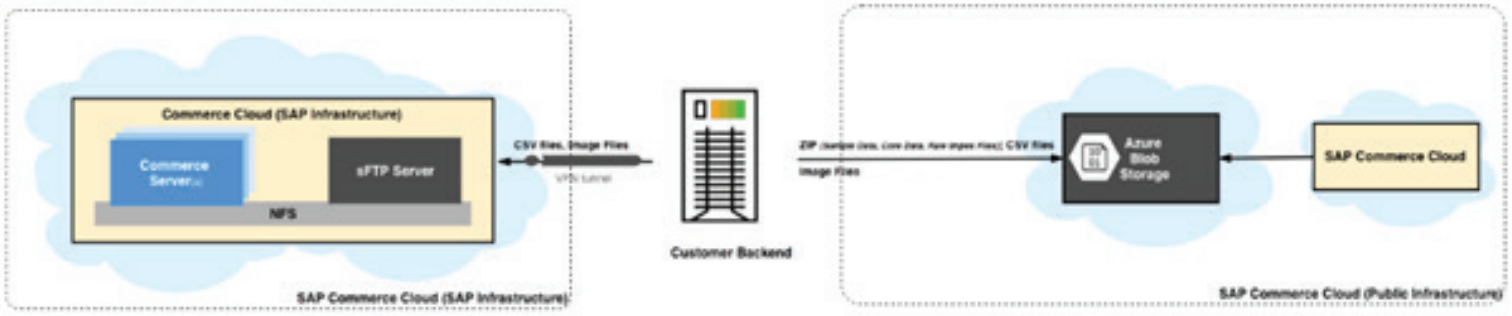
Cloud Hot Folders is the file-based integration strategy for SAP Commerce Cloud.

Within SAP Commerce Cloud, the Hot Folders module was extended to include the above improvements

- Remote Storage support (Azure Cloud Storage)
- Support for ZIP files (Core Data, Sample Data and Raw Impex Files)

- Support for URL Media files
- File Sorting
- Improved Monitoring

Cloud Hot Folder makes use of the Azure Blob Store as a file source. The following diagram shows how the solution has evolved from SAP Commerce Cloud on SAP Infrastructure to the new SAP Commerce Cloud.



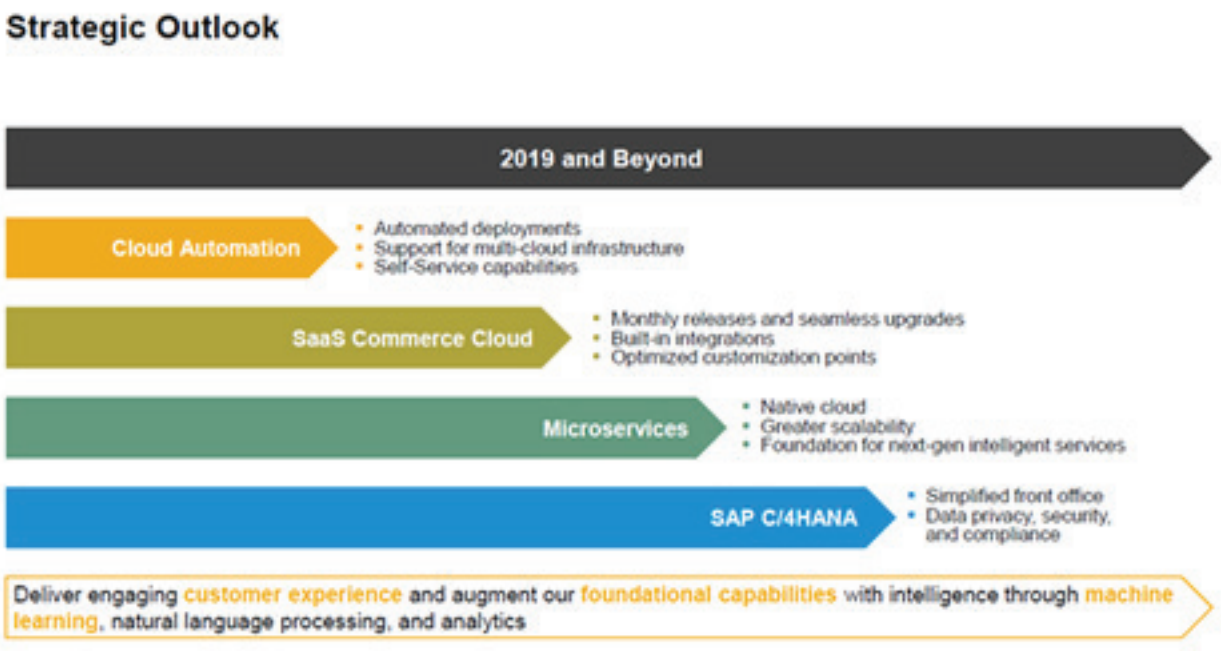
Website Redirects

Website redirects define alternative landing pages for your Storefront. Seasonal promotions are an ideal situation for redirects. When a visitor logs into the Storefront during a seasonal promotion, the redirect takes the visitor to the temporary promotional page. The visitor sees the special seasonal pricing without having to hunt for the information.

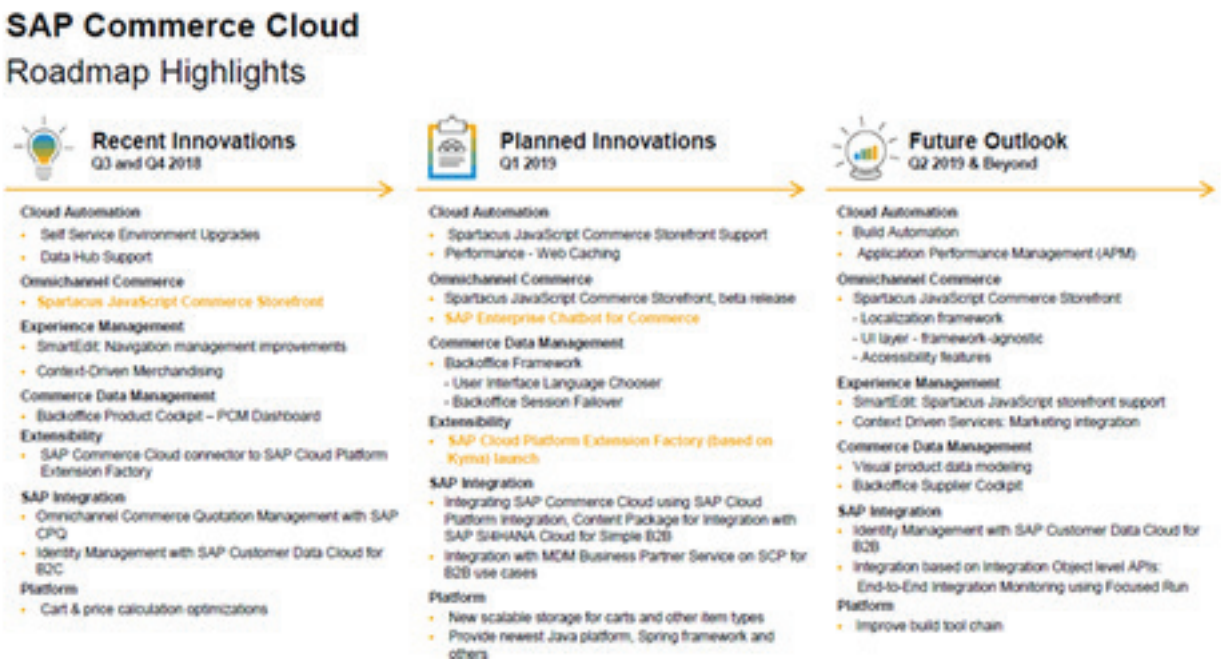
Website redirects helps to create a custom URLs to direct visitors to a specific page of your Storefront.

Road map for CCv(x)

Below diagram from SAP shows the overall road map for CC versions.

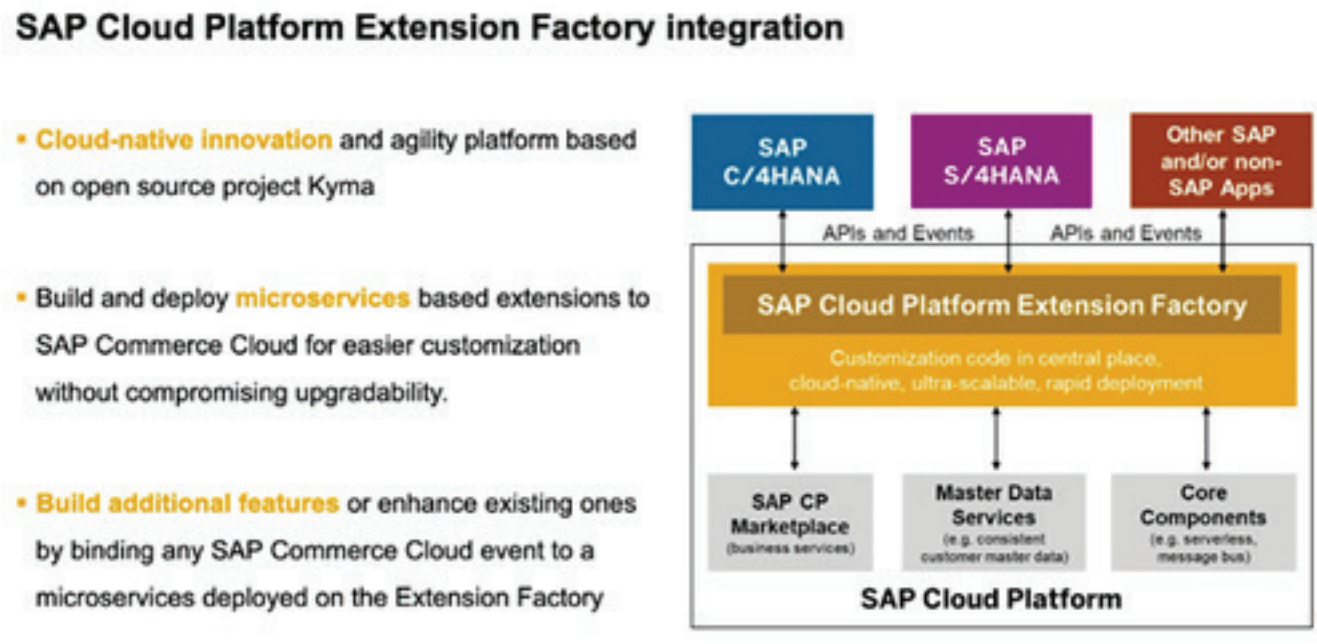


Road map highlights from SAP is below.



Significant changes for Cloud platform would be

- SAP cloud Platform Extension Factory integration: Build and deploy microservices based extensions and integrate with Commerce Cloud.
- Spartacus JavaScript Commerce storefront: PWA storefront.

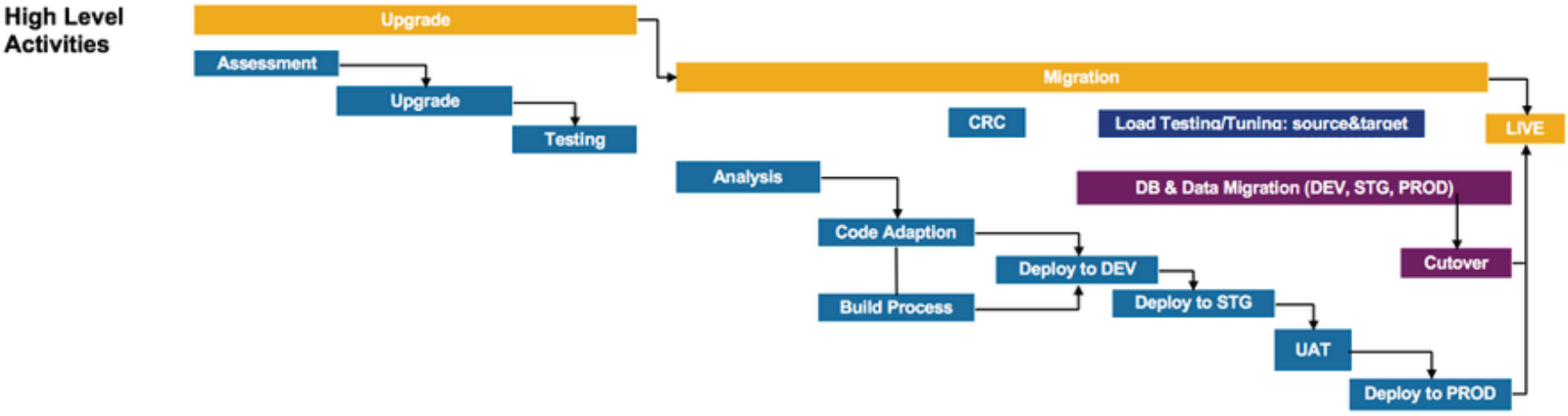


Migration Process

At a high level, the migration process comes down to 3 steps:

- Upgrade to a supported version (SAP Commerce 6.7+). If you are already on a supported version, you can skip this step;
- Provision your new SAP Commerce Cloud environments;
- Migrate from your existing environment to the provisioned SAP Commerce Cloud environments.

At a lower level, steps #2 and #3 contain additional activities. All activities, with the exception of the ones highlighted in purple, can be completed without SAP involvement. Due to security and privacy regulations, access to SAP Commerce Cloud Azure SQL database is only allowed by SAP.



Database & Media Migration

SAP team be involved for migrating the contents of existing database and media to SAP Commerce Cloud instance.

As part of it SAP team performs

- Migrate data from your source database to the target database, preserving the dedicated configurations of the target system.
- Migrate all the media on the Azure Blob Storage to have full and compatible access on the new SAP Commerce Cloud.
- Migrated data is verified to ensure no data-loss.
- In-scope environments are migrated on a one-to-one basis to ensure that each system has all the relevant information.

Upgrade and Migration Code

For most customers with an existing site, moving to SAP Commerce Cloud will require both an upgrade and migration project (U&MP). The upgrade occurs first and is thoroughly tested before the migration to SAP Commerce Cloud can start. Once the migration is complete, another round of thorough testing is needed to consider the code stable for release. The two parts of the U&MP are acting on the Commerce implementation in very different ways:

- The upgrade aims at upgrading the Commerce Platform to a supported target Commerce version, while ensuring any customization's are working properly on the upgraded Platform; it can significantly change the code.
- The migration aims to shift from existing hosting to SAP Commerce Cloud, with the focus being on ensuring compatibility with the SAP Commerce Cloud database solution, data, media, as well as changes in operations. In this phase it is critical that the data structure and its meaning are not changed in order to reduce errors during data migration. A migration project can be split into three main parts: technical phase (in which the code base is adapted to the new hosting strategy), migration phase (in which the data copy happens) and testing phase.

The above is very important to know since the kind of code changes applicable during and U&MP depends strictly on the part and phase in which the project is. Specifically:

- During the technical phase, it is less risky to introduce new features since the testing phase will spot potential issues.
- During the migration phase, it is absolutely crucial to not impact the operations happening at the database level, hence having a code freeze during this phase is very important.
- During the quality phase, while some changes might be acceptable, they will impact the coverage and results of the planned tests. Therefore, it is important to keep them to a minimum.

Comparison of Code Freeze Options

It is also relevant to note that code merging is a powerful task that allows the ability to pull together different branches of your code base. However, it also often introduces delays due to the complexity of the task and the necessary testing of the merged code.

In order to execute a upgrade and migration project (U&MP) the use of Code Versioning and Branching is critical.

In the following table, various aspects of the options are described:

	Code Freeze	No Code Freeze Between Upgrade & Migration	No Code Freeze, Release Freeze	Continuous Delivery of Features
	Option 1	Option 2	Option 3	Option 4
Feature development	✓ During upgrade technical phase ✓ During migration technical phase ✗ Not allowed during migration and quality phases	✓ During upgrade technical phase ✓ Between upgrade go live and migration start ✓ During migration technical phase ✗ Not allowed during migration and quality phases	✓ Continuous	✓ Continuous
Feature type: frontend changes	✓ Allowed during both upgrade and migration technical phases ✗ Not allowed during migration and quality phases	✓ Allowed during both upgrade and migration technical phases ✗ Not allowed during migration and quality phases	✓ Allowed during upgrade technical phase ✗ Not allowed during upgrade quality phase ✗ Not allowed during the migration project	✓ Always allowed
Feature type: logic changes	✓ Allowed during upgrade technical phase ✓ Allowed during migration technical phase previous analysis ✗ Not allowed during migration and quality phases	✓ Allowed during upgrade technical phase ✓ Allowed during migration technical phase previous analysis ✗ Not allowed during migration and quality phases	✓ Allowed during upgrade technical phase ✗ Not allowed during upgrade quality phase ✗ Not allowed during the migration project	✓ Always allowed
Feature type: database change	✓ Allowed during upgrade technical phase ✗ Never allowed during migration project	✓ Allowed during upgrade technical phase ✗ Never allowed during migration project	✓ Allowed during upgrade technical phase ✗ Never allowed during migration project	✓ Allowed during upgrade project, any phase ✗ Never allowed during migration project
Merge complexity	✓ Lower	✓ Lower	✗ Higher	✗ Higher
Risks at merge	✓ Lower	✓ Lower	✗ Higher	✗ Higher
Responsibility of the code	✓ Clearly defined at each phase	✓ Clearly defined at each phase	✓ Clearly defined at each phase	✗ Unclear. Will have to be defined depending on the nature of the error

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