AVEVA™ Unified Engineering on CONNECT with AppStream Service Description

Contents

AVEVA Unified Engineering on CONNECT with AppStream

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Document Purpose and Audience

Document Purpose

This document describes AVEVA Unified Engineering on CONNECT with AppStream, including its key features, limitations, and operational parameters.

This document must be read in conjunction with the CONNECT service description, which describes the common services available for all functional digital services on CONNECT. This document describes any additions or exceptions to the common services.

Audience

The audience of this document are IT departments and business decision-makers investigating whether to leverage AVEVA cloud offers in their own IT landscape.

About AVEVA Unified Engineering on CONNECT with AppStream

AVEVA Unified Engineering on CONNECT helps you manage and accelerate the iterative design and engineering process using one integrated product suite.

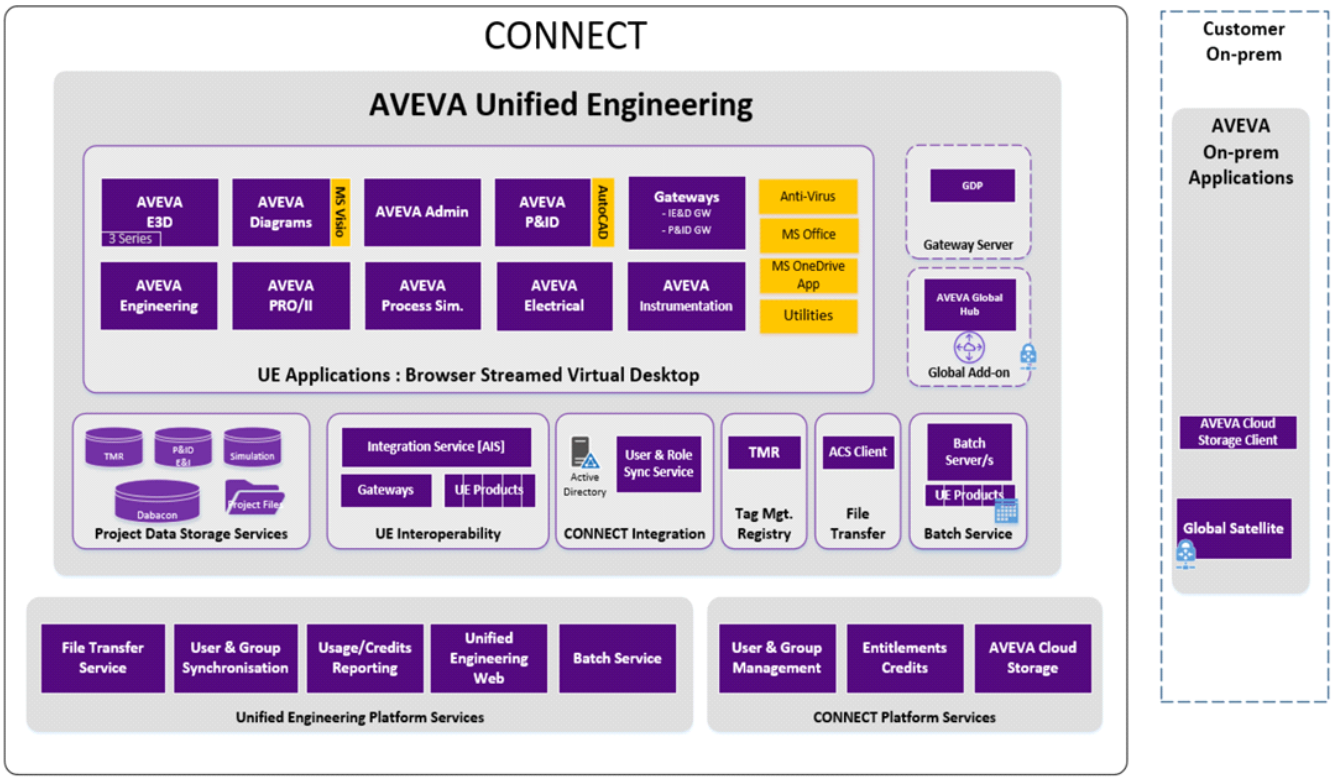
AVEVA Unified Engineering on CONNECT was created for customers investing in capital assets who want to maintain control and visibility of their digital assets, track the ongoing engineering and design progress, and manage deliverables.

- **Delivered via CONNECT**: AVEVA Unified Engineering on CONNECT applications are securely accessible over the Internet via CONNECT using Amazon Web Services' (AWS) AppStream to deliver streamed virtual desktops to users.
- **Integrated AVEVA Unified Engineering virtual desktop**: AVEVA Unified Engineering on CONNECT includes Windows-based engineering and design tools, AVEVA's simulation applications, and Microsoft Excel and Visio (for AVEVA Diagrams) as an integrated virtual desktop solution. This enables users to collaborate on a centralized cloud-based digital asset.
- **Complete control over networking environment**: AVEVA Unified Engineering on CONNECT is provided to customers on a private instance basis with a dedicated cloud infrastructure that isolates their resources and data and restricts administrative access to AVEVA-named team members.

- **Collaboration**: To support teamwork on a shared digital asset, the system uses a reliable dedicated cloud infrastructure to store application data on either AVEVA proprietary fileserver-based Dabacon storage or relational data in Microsoft SQL Server databases. AVEVA Unified Engineering on CONNECT server applications enable the interoperability and data sharing between the Unified Engineering desktop applications.

Architecture

The illustration below shows the AVEVA Unified Engineering on CONNECT shared services, dedicated infrastructure, and supporting backend services making up a single AVEVA Unified Engineering on CONNECT environment. The diagram includes optional add-ons extending the architecture for an on-premises hybrid model.



The service architecture follows a separation of concerns principle, with each AVEVA server component is deployed on dedicated virtual infrastructure instance(s).

AppStream for AVEVA Unified Engineering on CONNECT Desktop Applications

AVEVA Unified Engineering on CONNECT delivers the end-user applications via AppStream, an advanced streaming technology from AWS.

AVEVA Unified Engineering on CONNECT authoring applications have specific desktop requirements for a GPU processor to provide the best user experience. AppStream provides a reliable and secure cloud-based virtual desktop to meet the needs of end-users accessing the AVEVA Unified Engineering on CONNECT applications, while ensuring optimal performance due to the high-bandwidth, low-latency product requirements.

AVEVA Unified Engineering on CONNECT AppStream sessions are launched and managed using a custom golden image which represents the blueprint for the customer's software configurations. This golden image is used to automatically create AppStream sessions for AVEVA Unified Engineering on CONNECT users. The provisioning process creates sessions fleets, or a group of instances, optimized to deliver the approved AVEVA Unified Engineering applications within the AVEVA cloud environment.

A single AppStream specification is as follows:

- Graphics G4DN (8 vCPU, 32 GiB RAM, 1 vGPU, 16GiB Video RAM)

AVEVA Unified Engineering on CONNECT includes the installation and required licenses for the Microsoft Office products required to use the AVEVA Unified Engineering application: Microsoft Excel and Visio (AVEVA Diagrams users).

Applications Included in AVEVA Unified Engineering on CONNECT

Each AVEVA Unified Engineering on CONNECT release provides updates and additional functionality to the AVEVA Unified Engineering on CONNECT applications, and improvements to the cloud structure.

AVEVA Unified Engineering on CONNECT includes

- AVEVA E3D
- AVEVA Engineering
- AVEVA Electrical and Instrumentation (SQL)
- AVEVA PRO/II Simulation
- AVEVA Process Simulation
- AVEVA Diagrams
- AVEVA P&ID

  For exact versions of the applications included in the release, please see the respective AVEVA Unified Engineering on CONNECT Release Notes.

Microsoft OneDrive for Business Sync is included in AVEVA Unified Engineering on CONNECT to enable synchronization of users' folders and files between their Unified Engineering virtual desktop and their Corporate OneDrive for Business accounts.

Service Overview

AVEVA Unified Engineering on CONNECT provides access to geographically dispersed users, including multiple collaborating EPCs, with an on-demand desktop that is optimized for design and engineering authoring tasks. Everyone on the team can collaborate on a shared digital asset.

AVEVA Unified Engineering on CONNECT consists of three components:

1. **Standard Platform Services**

   When AVEVA Unified Engineering on CONNECT service is enabled in the customer's CONNECT account, one standard environment (or instance) is deployed by default. This environment is set to a chosen region data center; for more information, see *Regional Cloud Availability*. The default service includes:

   a. A 500 GB storage space for project data and user collaboration.

   b. The File Transfer service enables customers to transfer and synchronize files between the shared project storage in AVEVA Unified Engineering on CONNECT and the customer's network-connected, on-premises file server.

   c. The Batch Service enables users to schedule and manage the automation of common administrative tasks, generate reports, and create project deliverables using project engineering data. Users may also upload Programmable Macro Language (PML) macros for use on Dabacon project databases.

   For more information, see the *Add-On Services* content in this section and *Service Limitations*.

2. **User Services**

   The customer's CONNECT administrator assigns roles to users, which controls each user's access to one of the four services, the virtual desktop, and project data.

Services ->	**1D**	**2D**	**Simulation**	**3D**
Access To ->	AVEVA Engineering	1D application + AVEVA Electrical, AVEVA Instrumentation, AVEVA P&ID, AVEVA Diagrams	1D, 2D applications + AVEVA PRO/II, AVEVA Process Simulation	All + AVEVA E3D

3. **Add-On Services**

   Optional services include:

   - Incremental AVEVA Unified Engineering on CONNECT environments (or instances)

     An additional AVEVA Unified Engineering on CONNECT environment may be added for users in a new region. For example, if your default base is in Europe, but your projects and teams are in APAC, then a second environment can be provisioned in APAC to ensure optimal performance for local users.

   - Global Services

     – Hybrid use allows the synchronization of 3D project data between on-premises and the cloud. Hybrid use requires that the on-premises product version match the latest AVEVA Unified Engineering on CONNECT product version.

     – Cross-regional-peer use enables synchronization of 3D project data across AVEVA cloud regions.

     For more information, see the documentation *AVEVA Unified Engineering Global Add-on Service Guide*.

- Additional project data storage

  Customers may request that the project storage be extended to 2TB at no additional charge by submitting a customer support request.

To ensure correct AVEVA Unified Engineering on CONNECT configuration for a customer, the initial setup and ongoing management of the project configuration can be coordinated through the AVEVA service delivery teams. For more information, see *Additional Services*.

Service Limitations

AVEVA Unified Engineering on CONNECT has the following limitations when compared to on-premises use. These limitations are in place to mitigate potential risks and allow AVEVA to provide a Service Level Agreement (SLA) to customers.

Limitations:

1. The AVEVA Unified Engineering on CONNECT service can be accessed from approved browsers only.
2. Users do not have Windows administrative access to the AppStream desktop environment.
3. Not all folders and files on AppStream C:\ and D:\ drives are persisted between sessions, therefore users **should not** use these drives to **store critical data.** The AVEVA Unified Engineering on CONNECT user documentation provides instructions about which folders are persisted between AppStream sessions.
4. .NET customization of the AVEVA Unified Engineering on CONNECT application user interface is not supported. PML1 and PML2 customization are supported.
5. The File Transfer service allows synchronization of file-based data between the AVEVA Unified Engineering on CONNECT environment and an on-premises file location.
   a. 5GB per file may be transferred between the AVEVA Unified Engineering on CONNECT environment to an on-premises file location (bilaterally).
   b. This service storage has a total capacity of 200GB, which should be used for the temporary purpose of transferring files.
6. Standard Batch Service limitations include:
   a. Execution Time Limits: Batch jobs are limited to a maximum duration of 4 hours to prevent long-running or resource-intensive scripts. This helps to prevent a single macro from monopolizing system resources.
   b. Security Measures: Use of SYSCOM commands in PML macros is prohibited to mitigate against execution of malicious scripts on the underlying cloud server infrastructure used for script execution.
   c. Supported Modules: The service is designed and tested for use with the following applications and modules:
      – AVEVA E3D: Model, Draw, and Isodraft
      – AVEVA Administration: Admin
      – AVEVA Engineering: Engineer and Configuration
   d. Modules Switching: Avoid switching the primary application within a PML macro. Doing so may lead to inaccurate job execution statuses and potential job failures.
   e. Since the service uses headless versions of the AVEVA Unified Engineering applications on a server, the Batch Job service does not support automation with PML that require Device Graphic (DEV GRA) mode.

7. Global Services Add-On Limitations:

   The on-premises AVEVA Unified Engineering product versions must align with the versions used in the AVEVA Unified Engineering on CONNECT service when the AVEVA Unified Engineering on CONNECT service versions are upgraded on CONNECT. Contact your sales representative if this prerequisite cannot be met.

   Refer to the *AVEVA Unified Engineering Global Add-On Service Guide* for more information.

8. Integration with third-party products:

   a. Out-of-the-box direct integration with on-premises deployments of AVEVA applications and databases, and integration with on-premises or cloud-based third-party products is not supported.

   b. Where available in the AVEVA Unified Engineering on CONNECT desktop, third-party products are for specific use with AVEVA products. The third-party products will be upgraded only when required by AVEVA products (as part of the standard release cadence). There is no guarantee that the third-party products or tools not required by AVEVA products will persist from one release of AVEVA Unified Engineering on CONNECT to the next.

9. Services initiated/enabled via the AVEVA Technical Support team:

   a. Users do not have access to the AVEVA Unified Engineering on CONNECT back-end servers. Administrative activities for these servers can be requested through the AVEVA Technical Support team.

   b. Folder access control for projects is supported. To enable this, submit a request through the AVEVA Technical Support team.

Integration with Other AVEVA Cloud Services and On-Premises Products

AVEVA Unified Engineering on CONNECT can be used as an integrated solution with the following products and services:

1. AVEVA E3D Whitespace Optimizer to be used in parallel with E3D for optimizing production of 3D drawings.
2. AVEVA 3D Asset Visualization (formerly known as AVEVA Engage) on-premises to enable interactive visualization of their 3D project models.
3. AVEVA Enterprise Resource Management to exchange E3D Catalog data.
4. AVEVA Point Cloud Manager to directly work with reality capture data, ensuring clash-free 3D design and error free construction.
5. AVEVA Asset Information Management for project data publishing.

For additional information, review the associated AVEVA Cloud Services Description for cloud services (available at https://www.aveva.com/en/legal/service-description/), and the user guide documentation for on-premises products (available from the AVEVA Knowledge & Support Center website at https://softwaresupport.aveva.com/).

Regional Cloud Availability

AVEVA Unified Engineering on CONNECT is accessed via the public Internet using HTTPS (a secure transport mechanism). The web applications can be accessed via any supported web browser.

AVEVA Unified Engineering on CONNECT is available for deployment in the following public cloud regions:

- Americas - Canada Central
- Americas - South America - São Paulo
- Americas - US East - Northern Virginia
- Americas - US West - Oregon
- Asia-Pacific - Australia - Sydney
- Asia-Pacific - India - Mumbai
- Asia-Pacific - Singapore
- EMEA - Frankfurt
- EMEA - Ireland

NOTE: AVEVA Unified Engineering on CONNECT is not provided from any cloud regions based in China as these are autonomous facilities operated in isolation from cloud regions outside of China. Cross-region replication and operations between China regions and outside of China are not supported.

Users inside China can expect high network latency when connected to any web services outside of China. As such, AVEVA Unified Engineering on CONNECT cannot formally support users inside China.

Deployment Details

- Dedicated cloud infrastructure in a region: For each AVEVA Unified Engineering on CONNECT environment, AVEVA deploys a dedicated cloud infrastructure in the region of choice, where all AVEVA Unified Engineering on CONNECT project data and user access details are stored, including back-ups and any replication within the region.
- Shared multi-tenant micro-services: Delivery of AVEVA Unified Engineering on CONNECT is enabled using a series of shared multi-tenant micro-services made available centrally in the eu-west-1 (Ireland) region. These services provide a single-sign-on experience for users and enable integration with CONNECT services such as Credits and Licensing. Data held is limited to metadata only.

NOTE: If a customer chooses to use add-on services where the data is synchronized from their AVEVA Unified Engineering on CONNECT environment to an on-premises location, data may cross regional boundaries and is, therefore, no longer covered by the standard SLA.

Hardware and Software Requirements

AVEVA Unified Engineering on CONNECT with AppStream is executed through application streaming technology therefore client hardware requirements are minimal. Client software requirements are given below.

Desktop Client Network Requirements

Component	Minimum/Recommended
Supported web browsers	The latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari.
Firewall port	HTTPS port 443
Latency	100ms or less to the deployed region for best results
Internet bandwidth	5 Mbps or faster for the best user experience

Requirements For Global Services Add-On

- Secure site-to-site VPN tunnels between customer on-premises network and AVEVA Unified Engineering on CONNECT are deployed as part of the managed service provided by AVEVA.
- Installation and configuration of AVEVA Global satellites on-premises in customer network domain:
  - AVEVA will provide configuration changes to modify the on-premises VPN endpoint.
  - AVEVA will provide the IP addresses of AVEVA Unified Engineering on CONNECT on the CONNECT global server to configure the on-premises firewalls.
  - On-premises AVEVA products versions must be aligned with those deployed in AVEVA Unified Engineering on CONNECT (updated approximately four times per year).
- Network requirements will vary depending on the amount of data updates and frequency of updates.

Third-party Software Licenses

The following software licenses are included as part of AVEVA Unified Engineering on CONNECT as needed:

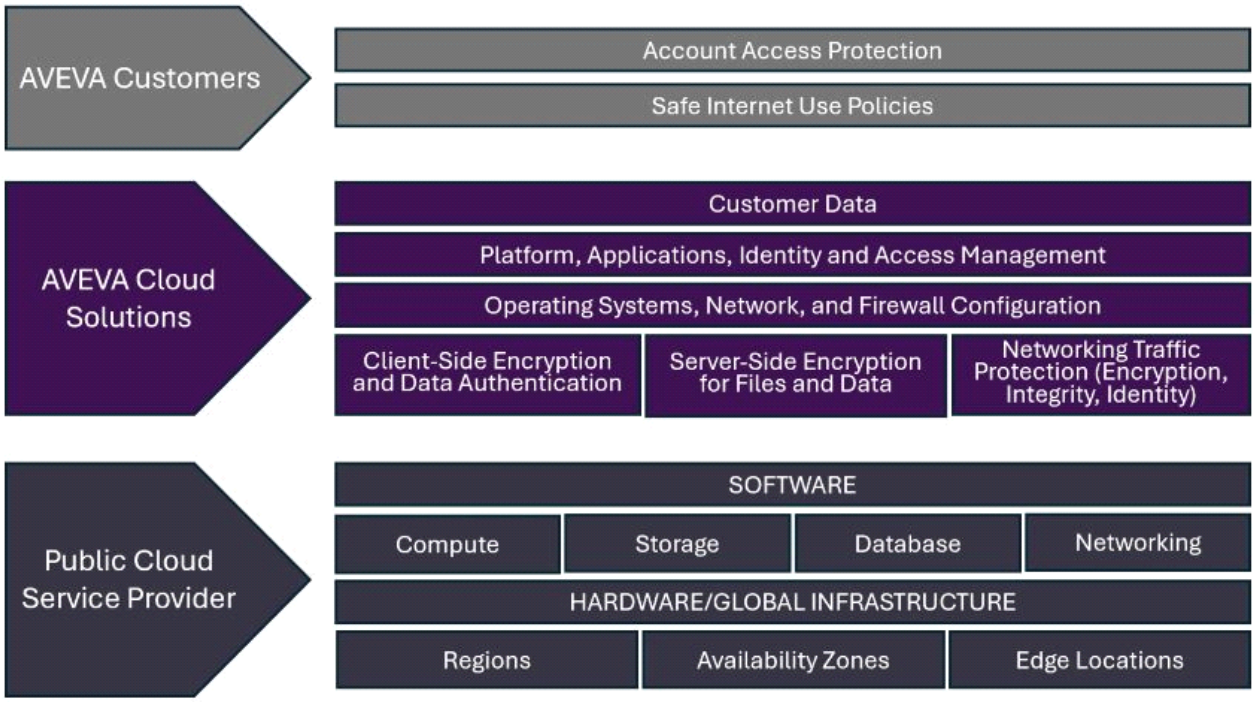
- AVEVA software as required for all services.
- Microsoft Office LTSC Professional Plus 2024 32-bit.
- Microsoft Visio LTSC Standard 2024 32-bit for AVEVA Diagrams – Diagrams Module.

When required, the customer must provide the following software licenses for use:

- Autodesk AutoCAD (The customer should purchase stand-alone/single-user AutoCAD licenses directly from Autodesk.)

Security Standards and Compliance

AVEVA Unified Engineering on CONNECT leverages a Shared Responsibility Model to clearly define each party's operational responsibilities.



With this model as the framework, AVEVA Unified Engineering on CONNECT implements the following:

AVEVA Cloud Solutions Security

AVEVA Unified Engineering on CONNECT employs technologies and architectural practices that ensure a high level of security for CONNECT. For additional information about the security features of CONNECT, review the CONNECT Service Description.

AppStream Security

Registration Security

As part of the AVEVA Unified Engineering on CONNECT managed service, AppStream sessions are provided to users as part of the self-service user and role management functionality of CONNECT, and the integrated Unified Engineering services. User identity is managed by CONNECT and the integrated AVEVA Unified Engineering single sign-on (SSO), eliminating the need for a separate registration process.

Microsoft Active Directory for User Identity

Integration of the CONNECT user identity management services and the dedicated Microsoft Active Directory instance within each customer's AVEVA Unified Engineering environment is used to control user access, privileges, and permissions across the AVEVA Unified Engineering on CONNECT service. Microsoft Active Directory is a highly available managed service provided by the cloud service provider.

AppStream Network Encryption

AppStream session visual output is compressed and streamed to users as an AES-256 encrypted pixel stream over HTTPS.

Customer Security Guidance

While AVEVA implements core security controls, customers are responsible for additional safety measures to safeguard their digital environment. To enhance the security of their streamed desktops, customers must implement:

Account Access Protection

Users and user groups are defined and managed using CONNECT, which also handles their assignment to access specific application instances and application roles. Customers must take steps to prevent faults that result from action or inaction from the customer employees, agents, contractors, or vendors, or anyone gaining unauthorized access to CONNECT or unassigned roles by using the customer passwords, accounts, or equipment.

Regularly review and revoke access for inactive or departed users. To control user access, the user account can be restricted by removing roles or group membership in CONNECT.

AVEVA recommends that customers implement identity federation to CONNECT or use the multi-factor authentication (MFA) features for CONNECT user accounts.

Safe Internet Use Policies

AVEVA Cloud solutions may include methods allowing access to the public internet (for example, through a browser or natively through AVEVA products) during use of AVEVA Cloud solutions. Protections integrated with these methods may differ from those in non-AVEVA environments and customers are responsible for enforcing adherence to safe internet use policies by their users. Personally identifiable information (PII) or other protected information should not be provided by users through AVEVA Cloud solutions.

Take necessary steps to prevent introducing any virus or malware negligently or otherwise, by the customer's employee, agent, or contractor, on any CONNECT service. Do not install or use applications that are not on the provided AppStream session, including but not limited to unauthorized remote access tools, VPN clients, and file-sharing applications; these tools may introduce security risks.

Additional Terms

AVEVA Cloud service provider partners may include additional terms regarding the use of their technologies. These terms may be available at https://aws.amazon.com/service-terms/, or they may be provided during product installation or while accessing their plug-ins or other software.

Administrative Access

To enable the secure management and configuration of AVEVA Unified Engineering on CONNECT applications and services, authorized members of the AVEVA Services and Cloud DevOps teams use Microsoft Remote Desktop Protocol (RDP) to access specific cloud server instances. This access is granted to named users via a bastion server which acts as a jump server allowing authorized AVEVA team members (Cloud DevOps team) to establish a second RDP session to jump onto the relevant private subnet server(s) to carry out administration and configuration tasks.

Decommission of the Service

Upon request and confirmation from the customer to decommission the service, AVEVA initiates the following:

- Deletion of all customer data held in databases, file storage and back-ups.
- Removal of all users' AppStream session persisted storage.
- Removal of all cloud infrastructure and serverless resources associated with the customer tenant.

A backup of the Dabacon databases, and the last full SQL Server back-up and file-based data may be provided (for an additional fee) upon request from the customer as part of the request for decommissioning.

High Availability, Business Continuity, and Data Protection

To ensure high availability, business continuity, and data protection, AVEVA Unified Engineering on CONNECT follows the time intervals given below.

- **Data Storage**: The AVEVA Unified Engineering on CONNECT applications use either the file-based AVEVA Dabacon platform, proprietary simulation data storage, or relational data managed in Microsoft SQL Server.
- **Data Backup**
  - Backups are created on a daily schedule.
  - All backup data is stored in the same cloud region as the cloud service. All backups are held on secondary storage which is replicated across multiple data centers within the same region.

NOTE: Production environment data backup retention exceeds the requirement to meet the defined recovery targets and service levels.

- **User Profile and Data**
  - When a user's AppStream session launches, a virtual hard drive (VHD) file is mounted to folders for persisting the user's settings and profile. Upon exiting the session, the folders are synchronized to AWS3 to be ready for the next AppStream session.
- **Disaster Recovery**

In the event of a service failure, AVEVA initiates a recovery process in accordance with RPO and RTO objectives detailed below.

Cloud Service	**Recovery Point Objective (RPO)**
AVEVA Unified Engineering on CONNECT	24 hours

Cloud Service	**Recovery Time Objective (RTO)**
AVEVA Unified Engineering on CONNECT	48 hours

Service Level Commitment

AVEVA Cloud Services are governed by the AVEVA General Terms and Conditions.

The AVEVA Cloud Service Level Commitment is a supporting document that describes the service level commitment for all available AVEVA Cloud Services.

Both documents are available on the AVEVA website at https://www.aveva.com/en/legal.

Exclusions

- Infrastructure Availability: The AVEVA Cloud Service Level Commitment (SLA) does not include non-availability due to scheduled or emergency maintenance of the application services or CONNECT.
- Service levels are applicable to production environments only.
- For production environments employing the Global Services Add-On for hybrid project-sharing, the service level commitment is not applicable to services dependent either directly or indirectly on on-premises processes or configurations. For example, ensuring the availability of the site-to-site VPN for connectivity or interruptions in service as a result of changes to any on-premises component (infrastructure, networking, computer, firewalls, routing etc.).

Service Maintenance

Service maintenance windows required for environment backups, updates, and upgrades to AVEVA Unified Engineering on CONNECT are as follows:

- A weekly, scheduled maintenance window and downtime of up to two hours is required to carry out fully consistent back-ups and OS maintenance operations. During the maintenance time, users cannot access the service. This maintenance window is agreed with the customer at the point of order.
- Updated versions of AVEVA Unified Engineering on CONNECT require a service maintenance window on a quarterly basis with a minimum maintenance window of six hours. It is scheduled in advance and performed outside of the customers' stated key business hours.

  Release notes describe the changes in updated versions of AVEVA Unified Engineering on CONNECT and are available from your AVEVA Customer Success Manager or from the AVEVA Documentation portal at https://docs.aveva.com/.

Additional Services

AVEVA offers an extensive collection of Customer Success Accelerators, well-defined, outcome-based services that are designed to ensure you realize the maximum benefit from your investment in our software through all the lifecycle stages of your software application.

For more details, visit the *Customer Success Accelerators site https://www.aveva.com/en/support/customer-first/success-accelerators/*.