

Empower Cloud Deployment and Technical FAQ

1. Is System Object Import supported for Cloud deployments?

System Object import functionality is not supported in the first Empower Cloud release.

2. Can you leverage AWS EC2 Systems Manager for patch management of AWS EC2 instances?

This will be dependent on customer workflows and your change control practices. While this toolset is available by AWS, customers may choose not to utilize. The Waters Deployment guide documentation shall provide advisement on how to use this based on AWS published documentation.

3. How will you deploy updates to your workspaces?

This will be dependent on customer workflows and how you desire to manage your change control practices. Customers can push software updates to each workspace, manually update the software, or utilize Workspace bundles to deploy new workspaces for existing users while adhering to decommissioning processes of old workspaces.

4. Who sets up the AWS account?

Customers are responsible for establishing accounts with AWS. For customers not currently an AWS partner, Waters can help facilitate partnership steps and AWS contacts.

5. How are backups handled?

This is described in the deployment guide in the section on how to perform preventative maintenance and disaster recovery activities. Generally, you can perform backups as you do today, natively within the computing instances, and you can obtain snapshots of the EBS volumes based on the customer's practices. Both methods result in storage charges with AWS.

6. Who performs and manages backups and where are they stored?

The Empower database and raw data file backups reside within the EBS volumes that are attached to the EC2 server instance. In addition to these standard backups, the customer can take AWS snapshots of those EBS volumes. Whether they are performed by the hot or cold batch files or RMAN scripts, you can pull database/raw data files down to onsite locations by simply copying the content of the EBS volume folder that they are written to, and down through the network connection to the on-premise location. You can also copy them to the AWS S3 storage tier. Snapshots are not accessible outside of AWS. The deployment guide will outline further details.



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7. Who is responsible for the integrity of backups?

Customers are responsible for the integrity of the backups.

8. What is the installation process?

See the deployment guide for details.

9. Who is responsible for the installation?

Customers can perform the installation themselves, but Waters recommends you engage our Global Professional Services organization for site assessment and deployment services.

10. Who is responsible for IQ?

IQ remains the responsibility of the customer. Waters can aid in this effort via Global Professional Services.

11. What are the infrastructure requirements?

See the deployment guide for details.

12. What are the LAN requirements?

See the deployment guide for details.

13. What are the iOps requirements?

This is subjective to performance results and may vary depending on how the system is being utilized.

14. How will you migrate large databases to the Cloud? Does Waters offer this as a service?

Initial release is for new installations only. There are number of ways data can be moved into the cloud should it be desired to perform this manually. You can move it via your direct connect into the EC2 instance where the projects are to be restored. AWS can provide advisement on how to effectively move large amounts of data as they also offer AWS Import/Export services, and large storage devices such as Snowball and Snowmobile.

15. How will you handle Empower in the Cloud that is not using the Waters infrastructure approach? Will Waters support customers who will not be utilizing the Waters AMI's and Cloud Formation Templates from the AWS Marketplace?

Like any other custom installation, Waters Global Professional Services can assist in guidance and details around custom installations.

16. How did Waters configure their AWS test environment?

Our test environment matches what is outlined in the deployment guide.



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17. What Operating Systems are supported?

Windows 2012R2 Standard Edition is currently the only supported operating system for the EC2 instances and Windows 2008 Server running Windows 7 Experience for Workspaces. See the deployment guide for further details.

18. What version of Empower is supported? What Languages are supported? What platforms for databases are supported?

Empower 3 FR4 English and Oracle 12c for Windows is the platform that is supported, specifically version 12.1.0.4.

19. What do the Waters Cloud Formation Templates do?

The templates provide the automation of sequences to deploy Empower 3 FR4 on AWS resources in a reliable, repeatable manner. This builds the Empower 3 FR4 Database Server and an Empower 3 FR4 RawData file server.

20. Can you do something different than is allowed in the template?

No, it is advised that the templates be executed as they have been designed.

21. What do Amazon Citrix servers look like? (for customers who want to move existing Citrix environments into the Cloud with Empower).

We are advising customers to utilize AWS Workspaces, providing dedicated computing while reducing the infrastructure.

22. Will this work with other Third-Party applications either on premise or in the Cloud?

There is nothing to prevent the integration of third party applications or operability with other on-premise applications.

23. How do you verify that the Cloud work centers match up with the LAC/E boxes? Is this an easier process than with Citrix?

The process remains the same as handled today with on-premise systems.

24. What is the process for change management? In detail, who owns what area? (Customer, Waters, AWS)

Customers are responsible for deployed instances and maintaining the states of the instances, security updates, hotfixes, OS patches, etc.

25. How are changes monitored?

Changes are always monitored in accordance to practices you have implemented. AWS provides additional monitoring capabilities that customers can utilize. Items such as CloudWatch, Cloud Config, Cloud Trail and Inspector are AWS services that customers can choose to utilize to further secure and monitor your infrastructure governance practices.

26. Will Empower Mobile be supported in the Cloud?

Empower Mobile will not be supported with this first release.

27. Is user management different in the Cloud?

No. User management and the Config Management area of Empower function the same way in the cloud.

28. Can projects be easily imported and extended?

Yes. Importing and extending projects function the same way in the cloud.

29. Are CITRIX and VMWare needed with Empower Cloud?

No. Deployment of Empower Enterprise Cloud means that CITRIX, VMWare, and any associated licensing are no longer needed. The clients are installed on AWS WorkSpaces that are assigned to individual users.

30. How will we deploy?

A CloudFormation template will direct the creation of the database and file servers and silently install the Empower database. Cloud based Empower clients are installed on Workspaces manually from installation media shared from the server, and can be deployed to users via workspace bundles or another 3rd party tool. The deployment of LAC/E's and any physical clients is no different than traditional deployments.

31. What will Waters deliver?

Waters provides an AWS Marketplace solution that uses a CloudFormation template to provision Empower 3 Feature Release 4 Instances (Database Server and Raw Data File Server) into a customer's existing VPC. Waters also provides a deployment guide that outlines additional steps for building Empower Clients on AWS Workspaces and how the interconnectivity of resources takes place between on-premise and cloud-based infrastructure.

32. How do you perform backups?

Empower database backup and restore functionality remains unchanged when deployed in the cloud. Additional tools for the storage of those backups as well as the ability to take snapshots of the EBS volumes are natively available in AWS.

33. Where is the hand-off from Waters to AWS?

Waters will work collaboratively with the customer and your AWS team for all engagements. Customers who are not yet an AWS partner, will need to create an account with AWS which Waters can help facilitate.

How Waters supports the Empower application does not change. If for some reason there are issues that are linked back to AWS, a Waters Certified Engineer will work with the customer and AWS to resolve it.



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34. How do customers upgrade from an existing configuration to Empower Cloud?

At this time, there is no direct migration of an existing deployment into the cloud. A new installation of Empower will be created in AWS, and project data can be imported into the new deployment.

35. Are there limitations to database size?

Deployment in the cloud does not impart any limitations to the database size, as compared to a local deployment. Database storage and compute resources can be expanded as needed in AWS.

36. Where is the data located?

Data stored in the cloud on AWS resources, physically located in AWS regions and availability zones as selected by the customer.

37. Who has access to the data?

Access to the data is fully controlled and defined by the customer via their AWS account settings. No other individuals, including AWS personnel, have direct access to customer data and resources. AWS can only see what services their customers are consuming, and not the content within. The Empower application user permissions and access restriction functionality remains unchanged.

38. How will an active cloud deployed Empower instance be upgraded?

An upgrade to an Empower installation in the cloud is essentially the same as an on-premises upgrade. Because CITRIX is not used in the cloud, updates to the clients installed on WorkSpaces must be performed manually or pushed out by the tool of your choice for automation.

39. Can projects be easily imported and exported?

Importing and exporting projects will work the same as it does today from Configure System.

40. Are Empower backups still required if the Cloud is fully redundant?

In addition to the redundancy enhanced backup functionality provided by AWS cloud, we recommend that customers continue to perform RMAN backups from within Waters Database Manager as they would with an on-premises deployment.

41. Is non-English Empower supported in the Cloud?

At this time Empower in the cloud is supported in English only.

42. Is Empower user management different in the Cloud?

No. Users are managed in the same way they are today.

43. Do customers need an AWS specialist?

Customers do not need an AWS specialist but they do need IT resources to work with AWS. Just as we provide our customers support, AWS provides support to your IT department as well.

44. How much downtime can be expected with AWS?

Please see the links provided on the Waters Empower Cloud website, guiding you to AWS SLA services details.

45. How do I migrate my data?

The migration of data in and out of a cloud instance of Empower is no different than with an on-premises deployment.

46. How do I archive my data?

The archival of data out of a cloud instance of Empower is no different than with an on-premises deployment.

47. How does Empower Cloud work with my LMS system?

A cloud instance of Empower interacts with an LMS system no differently than with an on-premises deployment.

48. Are my LAC/E systems in the Cloud as well?

No, the LAC/E remains locally deployed in the laboratory with your instrumentation and communicates with the database via AWS Direct Connect. Instrument connections and local data buffering functionality are no different than a traditional deployment.

49. Can I easily import and export my projects?

Yes, the import/export of projects in a cloud instance of Empower is no different than with an on-premises deployment.

50. How is access arranged for Service Engineers? How does it relate to SQT for instruments?

Access to either a local Empower client or an AWS WorkSpace (with a client installed) is provided to the Service Engineer by the customer to access their system. SQT for instruments runs the same as with an on-premises deployment.