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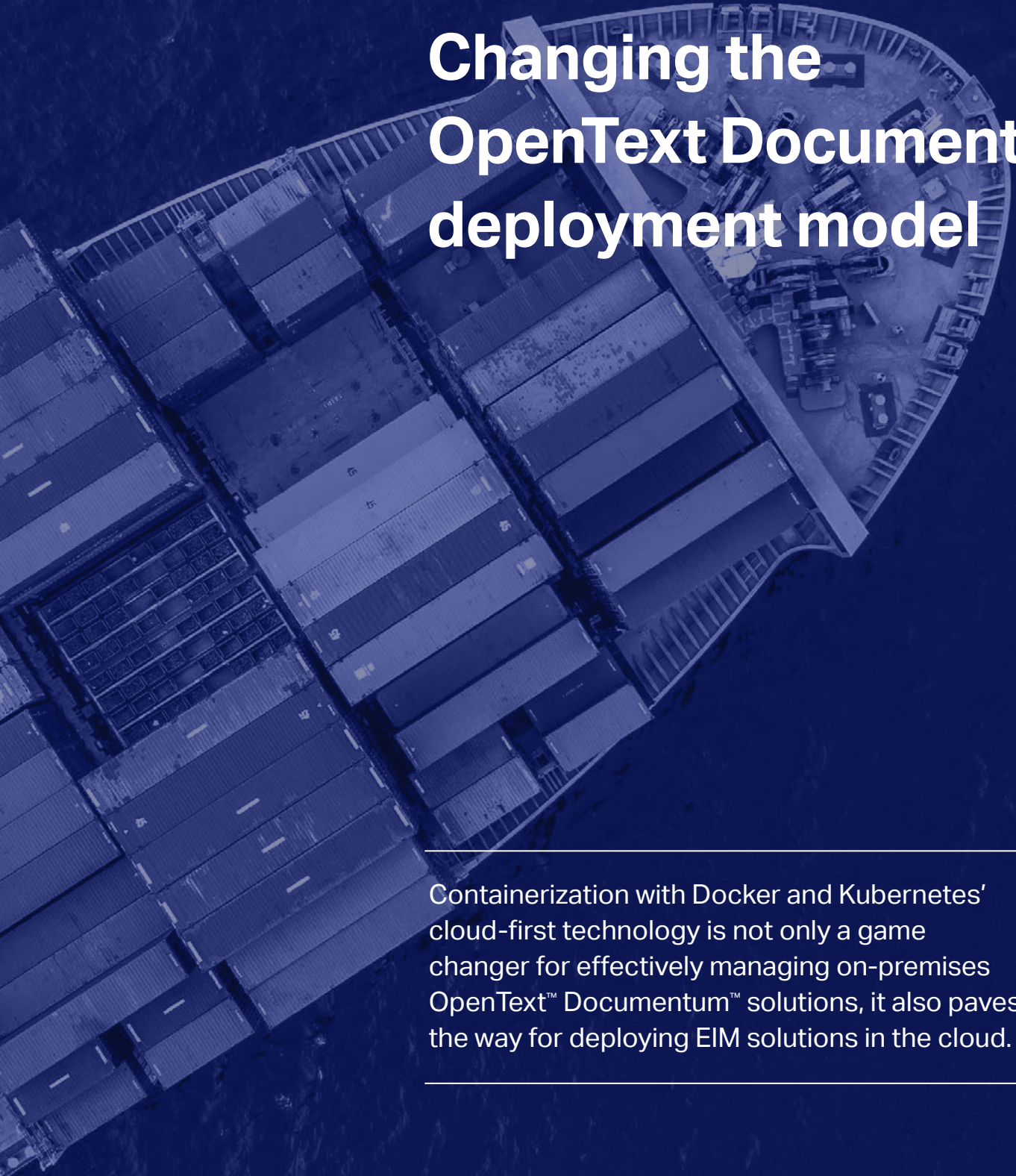
White paper

# Docker and Kubernetes: Changing the OpenText Documentum deployment model



Containerization with Docker and Kubernetes' cloud-first technology is not only a game changer for effectively managing on-premises OpenText™ Documentum™ solutions, it also paves the way for deploying EIM solutions in the cloud.

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## New deployment models

OpenText™ Documentum™ administrators can face two challenges:

1. **Effectively managing complex Documentum deployments.** Highly customized, mission-critical applications consume disproportionate administrative cycles, budgets and resources to install, upgrade, maintain and enhance. Upgrading these applications requires significant investments in change management. As a result, applications are often not upgraded in a timely fashion and do not leverage the latest technology.
2. **Developing a cloud strategy for Enterprise Information Management (EIM) applications.** Corporate IT is under intense pressure to produce an enterprise cloud strategy. Leveraging cloud technology for Enterprise Information Management (EIM) applications can be a big win, as long as it does not impact adoption, productivity and governance.

Containerization enables new deployment models to help organizations meet these challenges, effectively managing on-premises solutions and paving the way for deploying EIM solutions in the cloud.

## Customer case study—Part I

This real-world customer case study illustrates how containerization can benefit existing Documentum customers.

Jane, the IT director for a highly regulated Energy company, is struggling because her team manages a very complex Documentum deployment that includes processes, procedures, reporting and distribution for a mission critical application. This solution is highly customized and integrates with many other systems across the enterprise. Her company is still running Documentum version 7.1, released in November 2013, and as a result, cannot take advantage of the many new capabilities and improvements introduced over the last six years. In addition, standard support for this version ended in November 2017, so Jane and her company are paying additional extended maintenance charges on top of standard maintenance costs. Jane has no strategy for how this essential, on-premises application will "live in the cloud."

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## What is containerization?

Containerization is an open-source platform that allows for quicker deployments and installations by leveraging cloud technology. Internal Documentum product teams at OpenText leverage containerization and many customers have already deployed complex production applications using this technology.

Containerization is used for both on-premises and public cloud deployments. Documentum currently supports the OpenText Cloud, Cloud Foundry, Microsoft® Azure® and Google Cloud, with AWS support coming in April 2020. Run books are available that detail the Docker configuration processes for each platform.

OpenText containerization is facilitated by leveraging state-of-the-art technology from **Docker** and **Kubernetes**.

### What are Docker containers?

Docker is an open-source, cloud-first technology that automates the delivery of applications inside portable software packages called containers. Containers bundle the software binaries, dependencies and configurations needed to run an application module. Docker provides a layer of abstraction and automation of operating system-level virtualization to the containers. Packaged applications can be deployed to any Docker runtime engine installed on common scale-out servers.

In comparison, with VMware® applications are deployed via individual instances requiring individual installation and configuration. Docker deployments are self-enclosed, with configuration at the package level. Instead of installing four different technologies via VMware, users only install one with Docker.

As the diagram below illustrates, Docker condenses an organization's infrastructure to a much more manageable level through standardization, similar to how a container ship is loaded for maximum efficiency.

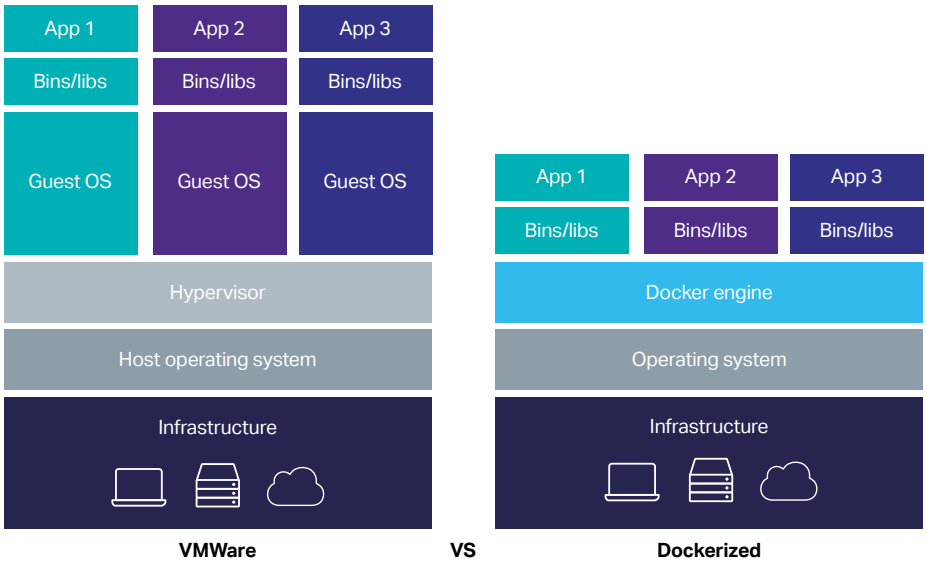


Figure 1: Docker containers condensing load

### Docker container advantages

The advantages of using Docker for container deployments include:

- Shared resource usage and reduced costs
  - Containers use system resources (CPU, memory) more efficiently than bare metal or virtual machines for reduced cost and administration for the same solution
- Normalized deployments
  - Application portability enables repeatable development, build, test and production environments for a higher degree of standardization and productivity
- Continuous integration efficiency
  - Build container image and use across all environments, separating non-dependent steps to run in parallel, resulting in faster software delivery cycles with greater potential for innovation
- Rapid deployment
  - Reduced to seconds as a container is created for every process and does not boot the operating system
- Continuous deployment and testing
  - Containers configured to maintain configurations and dependencies internally
- Isolation
  - Applications and resources are isolated and segregated, enabling clean app removal and ensuring that apps only use resources assigned to them
  - Enhances security with segregated apps, enabling complete control over traffic flow and management
- Multi-cloud support
  - Docker has been adopted by all major cloud platform vendors

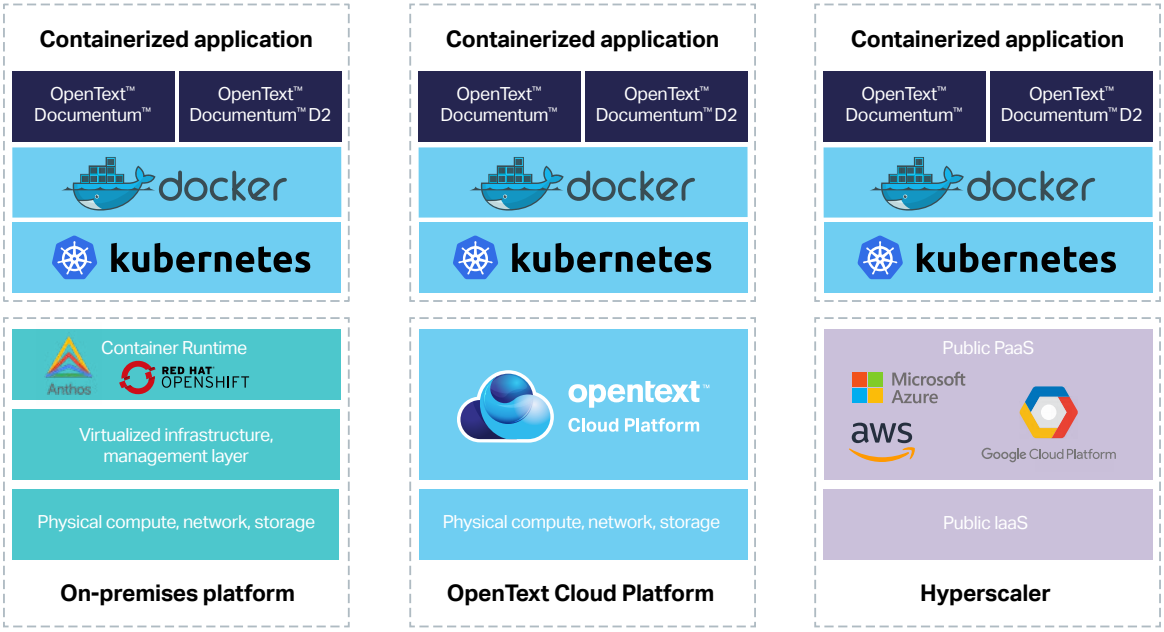


Figure 2: Docker offers portability, segregation and multi-cloud support

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With Docker containers, compatibility issues are a thing of the past.

When troubleshooting an issue with OpenText Support, issues can be replicated on a container identical to the one implemented. Compatibility issues are a thing of the past.

### Available containers

All of the base Documentum products are available on the Docker platform. The following list is complete as of January 2020. Follow the Documentum release notes for updates on other product availability.

- OpenText™ Documentum™ D2
  - Documentum D2 Config
  - Classic Client
  - Smart View Client
- OpenText™ Documentum™ Server
- Documentum Docbroker
- Documentum APIs and SDKs
  - OpenText™ Documentum™ REST Services
  - OpenText™ Documentum™ Foundation Services
- Documentum tools
  - OpenText™ Documentum™ Administrator
- Searching and indexing
  - OpenText™ Documentum™ xPlore
- Documentum platform extensions
  - OpenText™ Documentum™ Content Storage Services
- OpenText™ Documentum™ Content Transformation Services
  - OpenText™ Documentum™ Content Transformation Services - Media
  - OpenText™ Documentum™ Content Transformation Services - Documents
  - OpenText™ Documentum™ Content Transformation Services - Audio Video
- OpenText™ Documentum™ Retention Policy Services
- OpenText™ Documentum™ Records Manager

### What is Kubernetes?

Kubernetes provides the coordination or orchestration of the containers. It monitors and manages the containers. With Kubernetes, users know what is deployed, where it is deployed, what is out of date and how to rollback.

Kubernetes manages the container traffic and performance. It is patched inside Helm charts to streamline installing and managing Kubernetes applications.

### Kubernetes advantages

Using Kubernetes to orchestrate containers provides the following advantages:

- Manages related and distributed components across various infrastructures
- Provides scalable deployments and upgrades
- Orchestrates storage solutions
- Deploys to private and public clouds

Containerization leveraging Docker and Kubernetes resolves effectively managing complex Documentum deployments.

## Customer case study—Part II

Returning to Jane and her team at the Energy company, as previously detailed, Jane is years behind on Documentum upgrades and is paying additional maintenance costs to remain supported and compliant. By leveraging Docker and Kubernetes, they deployed their unique customizations and applications within containers and slashed the usual time needed to upgrade from Documentum 7.1 to 16.4. The team used a dual approach of implementing containers alongside their existing systems. Containers can now be updated independently, enabling a continuous delivery pipeline to automate minor updates.

## EIM in the cloud

Focus now turns to solving an absence of a cloud strategy for legacy EIM applications.

### What is the cloud?

Before exploring how to build a cloud strategy, it is important to define what "cloud" means, as it can be many different things to different people.

Cloud computing is a three-tier structure. Many companies are familiar and already deploying in the first tier, infrastructure, and others are beginning to leverage cloud technology at the platform level. The true value, however, is found by leveraging the application level of the cloud, which is where the OpenText Cloud comes into play.

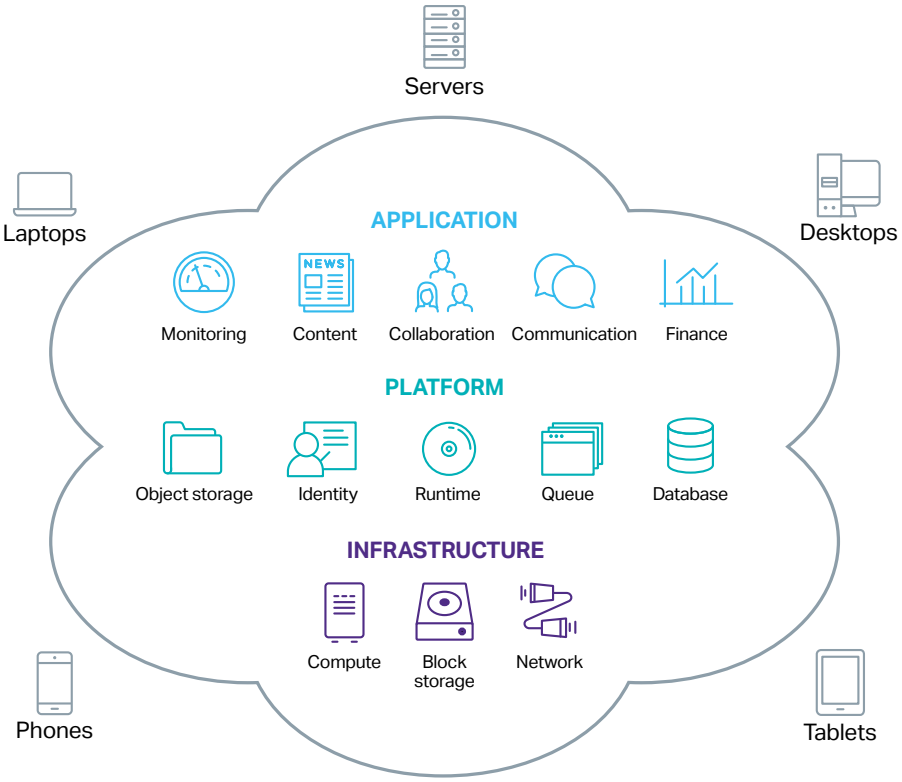


Figure 3: Cloud computing

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**"The average business runs 38% of workloads in a public cloud and 41% in a private cloud."**[1]

### Cloud EIM

So, what does cloud technology really do for EIM applications?

Moving on-premises EIM applications to the cloud is a multi-phase strategy. Taking advantage of Docker and Kubernetes to containerize EIM applications is the first step. Not only do enterprises realize the benefits of containerization to effectively manage applications on-premises, but containerization also prepares the applications for the later phase of deploying to a public or private cloud. Containerization allows organizations to align their EIM cloud strategy to their enterprise-wide cloud strategy, regardless of whether it is the OpenText Cloud, an on-premises platform or leveraging a public cloud.

Customers consume OpenText software and services in multiple ways, depending on their need and company strategy. Containerized systems can run alongside existing ones to enable a manageable cloud adoption path.

There are five delivery patterns for OpenText solutions. Documentum can be run on patterns one to four or a combination. Pattern five includes OpenText™ Core for Federated Compliance, OpenText™ Life Sciences Express and OpenText™ Core Share, which are SaaS applications that extend the capability and value of Documentum.

| OpenText software on-premises in user's data center | OpenText software in public cloud | OpenText™ Managed Services in private OpenText Cloud | OpenText™ Managed Services in public cloud | Native SaaS cloud on OpenText™ OT2 |
|---|---|---|---|---|
| **Pattern 1** | **Pattern 2** | **Pattern 3** | **Pattern 4** | **Pattern 5** |
| • Behind the firewall<br>• **Users manage, update and upgrade software** | • Customer managed<br>• **Complex set of relationships and SLAs** | • OpenText manages software<br>• **A single SLA covers infrastructure and application** | • OpenText manages software<br>• **Single vendor relationship** | • Cloud-native multi-tenant applications<br>• **Self-service configuration** |
| Run VM or cloud-native inside the firewall with regular and simplified updates | Move existing EIM workloads to the cloud to lower costs, improve agility and drive innovation | Software run by OpenText. A single SLA that covers infrastructure and application | Deploy on Public Cloud to accelerate growth and address data sovereignty, elasticity and compliance requirements | Integrate SaaS applications to offer efficiency and flexibility to meet specific use cases |

Figure 3: Options for cloud adoption

Moving EIM applications to the cloud enables organizations to focus on core business as it alleviates the following roadblocks associated with on-premises deployments:

- Growing demands—from both users and customers.
- Line-of-business investment—high operating costs to develop, manage and maintain.
- End-user adoption—issues caused by performance and long deployment cycles.
- Resources—limited trained and experienced EIM resources.
- Scalability—inability to deploy and grow as the business demands.

1 Flexera, RightScale 2019 State of the Cloud Report, 2019

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"OpenText Documentum in the cloud fulfills all our requirements and is significantly cheaper, offering approximately 30% operational costs savings over our previous on-premises deployment."

## Customer case study—Part III

In Part II, Jane and her team deployed their customizations and applications within containers, slashed upgrade time and saved onging extended maintenance costs. And, since the solution now resides in containers, they had the flexibility to choose the ideal delivery platform to align with their enterprise cloud strategy.

Jane chose to use OpenText Professional Services to move the solution, including OpenText Documentum as a Service, Documentum D2 and OpenText™ Documentum™ for Asset Operations, to a cloud managed service in the Google Cloud. As a result, the organization realized improved agility, lowered its TCO by 30 percent, improved compliance and productivity and enjoyed enhanced collaboratioin with external partners. Jane reported that "following an extensive ROI investigation, we found that Documentum in the cloud fulfills all of our requirements and is significantly cheaper, offering approximately 30 percent operational costs savings over our previous on-premises deployment."

Jane and her team can now focus on innovation, driving more enhanced functionality for their internal customers.

## OpenText Managed Services

OpenText™ Managed Services help organizations manage Documentum containers and leverage them at the application level where the true value of cloud deployments are realized.

Organizations have the best chance to succeed with flexible and customizable EIM Managed Services from a single trusted partner. OpenText Managed Services for EIM provides a complete solution for on-premises, cloud or hybrid implementations. Unlike many other managed services and XaaS providers, OpenText services can be individually tailored to meet an organization's exact requirements by allowing companies to select from simple support to complete management packages.

Organizations are looking for comprehensive management packages, including product support, technical skills and professional services. As the world leader in EIM, OpenText has the largest team of EIM experts with the skills and experience to deliver flexible management services to EIM implementations of all sizes.

For more information, please read the OpenText white paper, Unlocking value with EIM Managed Services.

## Summary

Containerization with Docker and Kubernetes' cloud-first technology not only transforms the management of on-premises Documentum solutions, but also paves the way for ultimately deploying EIM solutions in the cloud. These new technologies have come together to make it easier than ever to upgrade Documentum to the latest version and take advantage of new features, capabilities and updates.

### Resources

Documentum
Documentum update blogs
Upgrading Documentum using containers

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## About OpenText

OpenText, The Information Company, enables organizations to gain insight through market leading information management solutions, on-premises or in the cloud. For more information about OpenText (NASDAQ: OTEX, TSX: OTEX) visit: opentext.com.

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