



**Progress<sup>®</sup>**

# Kemp ECS Connection Manager - S3 Storage Optimization

## **Technical Note**

UPDATED: 01 February 2022

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

These materials and all Progress® software products are copyrighted and all rights are reserved by Progress Software Corporation. The information in these materials is subject to change without notice, and Progress Software Corporation assumes no responsibility for any errors that may appear therein. The references in these materials to specific platforms supported are subject to change.

#1 Load Balancer in Price/Performance, 360 Central, 360 Vision, Chef, Chef (and design), Chef Habitat, Chef Infra, Code Can (and design), Compliance at Velocity, Corticon, Corticon.js, DataDirect (and design), DataDirect Cloud, DataDirect Connect, DataDirect Connect64, DataDirect XML Converters, DataDirect XQuery, DataRPM, Defrag This, Deliver More Than Expected, DevReach (and design), Driving Network Visibility, Flowmon, Inspec, Ipswitch, iMacros, K (stylized), Kemp, Kemp (and design), Kendo UI, Kinvey, LoadMaster, MessageWay, MOVEit, NativeChat, OpenEdge, Powered by Chef, Powered by Progress, Progress, Progress Software Developers Network, SequeLink, Sitefinity (and Design), Sitefinity, Sitefinity (and design), Sitefinity Insight, SpeedScript, Stylized Design (Arrow/3D Box logo), Stylized Design (C Chef logo), Stylized Design of Samurai, TeamPulse, Telerik, Telerik (and design), Test Studio, WebSpeed, WhatsConfigured, WhatsConnected, WhatsUp, and WS\_FTP are registered trademarks of Progress Software Corporation or one of its affiliates or subsidiaries in the U.S. and/or other countries.

Analytics360, AppServer, BusinessEdge, Chef Automate, Chef Compliance, Chef Desktop, Chef Workstation, Corticon Rules, Data Access, DataDirect Autonomous REST Connector, DataDirect Spy, DevCraft, Fiddler, Fiddler Classic, Fiddler Everywhere, Fiddler Jam, FiddlerCap, FiddlerCore, FiddlerScript, Hybrid Data Pipeline, iMail, InstaRelinker, JustAssembly, JustDecompile, JustMock, KendoReact, OpenAccess, PASOE, Pro2, ProDataSet, Progress Results, Progress Software, ProVision, PSE Pro, Push Jobs, SafeSpaceVR, Sitefinity Cloud, Sitefinity CMS, Sitefinity Digital Experience Cloud, Sitefinity Feather, Sitefinity Thunder, SmartBrowser, SmartComponent, SmartDataBrowser, SmartDataObjects, SmartDataView, SmartDialog, SmartFolder, SmartFrame, SmartObjects, SmartPanel, SmartQuery, SmartViewer, SmartWindow, Supermarket, SupportLink, Unite UX, and WebClient are trademarks or service marks of Progress Software Corporation and/or its subsidiaries or affiliates in the U.S. and other countries. Java is a registered trademark of Oracle and/or its affiliates. Any other marks contained herein may be trademarks of their respective owners.

Please refer to the NOTICE.txt or Release Notes – Third-Party Acknowledgements file applicable to a particular Progress product/hosted service offering release for any related required third-party acknowledgements.

# Table of Contents

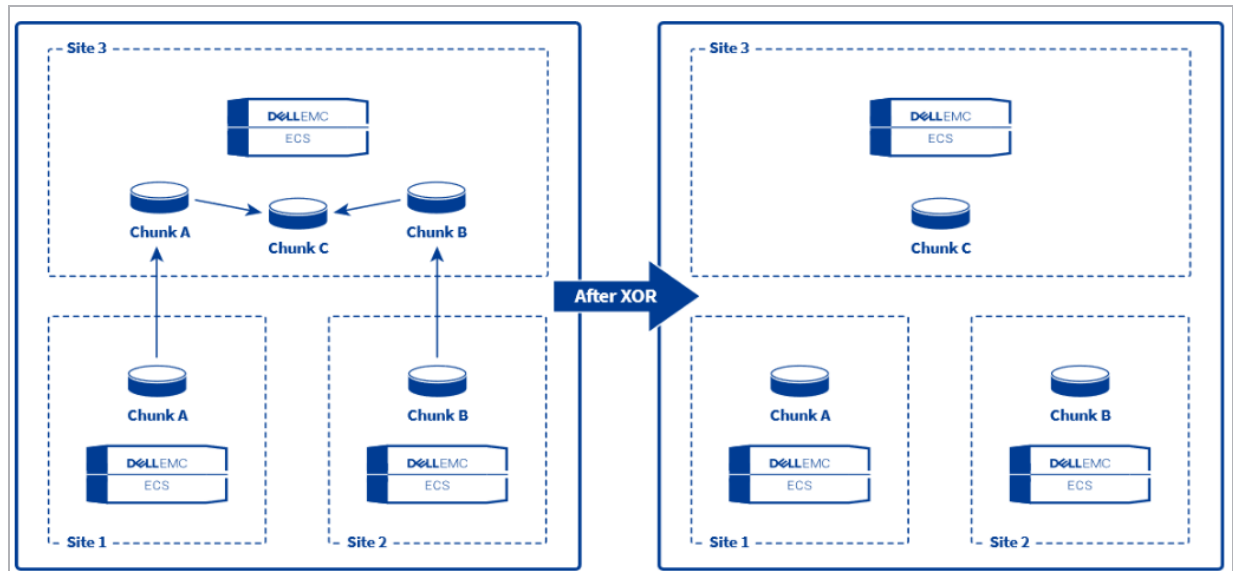
---

<b>1 S3 Optimized Scheduling</b> .....	<b>4</b>
<b>2 S3 Addressing Auto-Detection</b> .....	<b>5</b>
<b>3 Dynamic Global Host Resolution</b> .....	<b>6</b>
<b>Last Updated Date</b> .....	<b>7</b>

# 1 S3 Optimized Scheduling

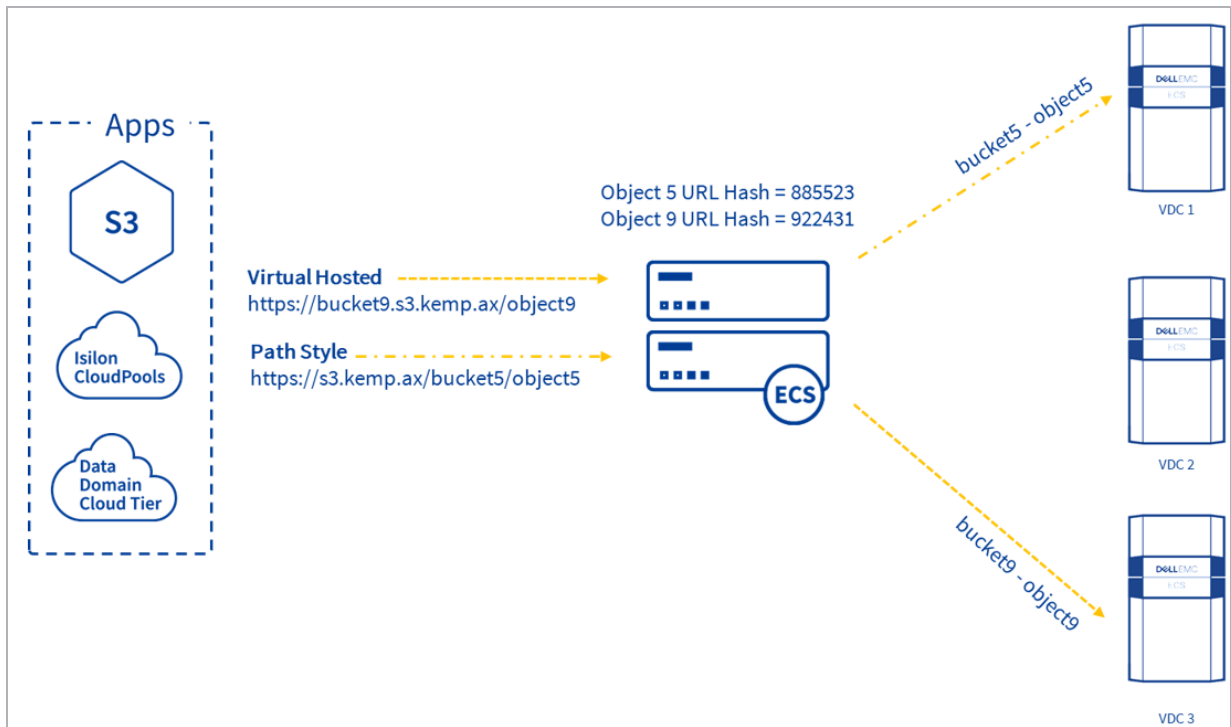
One of the many features of Dell EMC ECS is its ability to deliver storage efficiency using XOR. To enable this feature, XOR requires three or more Virtual Data Centers (VDC) or sites (eight maximum) replicating data chunks between them. Within each VDC, multiple chunks are combined into a single chunk therefore reducing the storage footprint while providing the necessary site redundancy. The load balancing component of an ECS solution leveraging XOR is essential to successful delivery.

When data is written to a site (VDC), that VDC becomes the owner of that object. When that object is read, it should be read from the VDC that owns it. If it is read from another VDC, that VDC must request the latest version from the owning VDC which will produce unnecessary overhead and latency on the ECS storage solution. The Kemp ECS Connection Manager delivers an **S3 Optimized Scheduling** method to ensure the accurate routing of object write and read requests. This method utilizes a URL Hash algorithm to distribute writes evenly across multiple sites and send all reads to the site owning the object. This purpose-built scheduling method delivers greater performance and optimization of the S3 traffic.



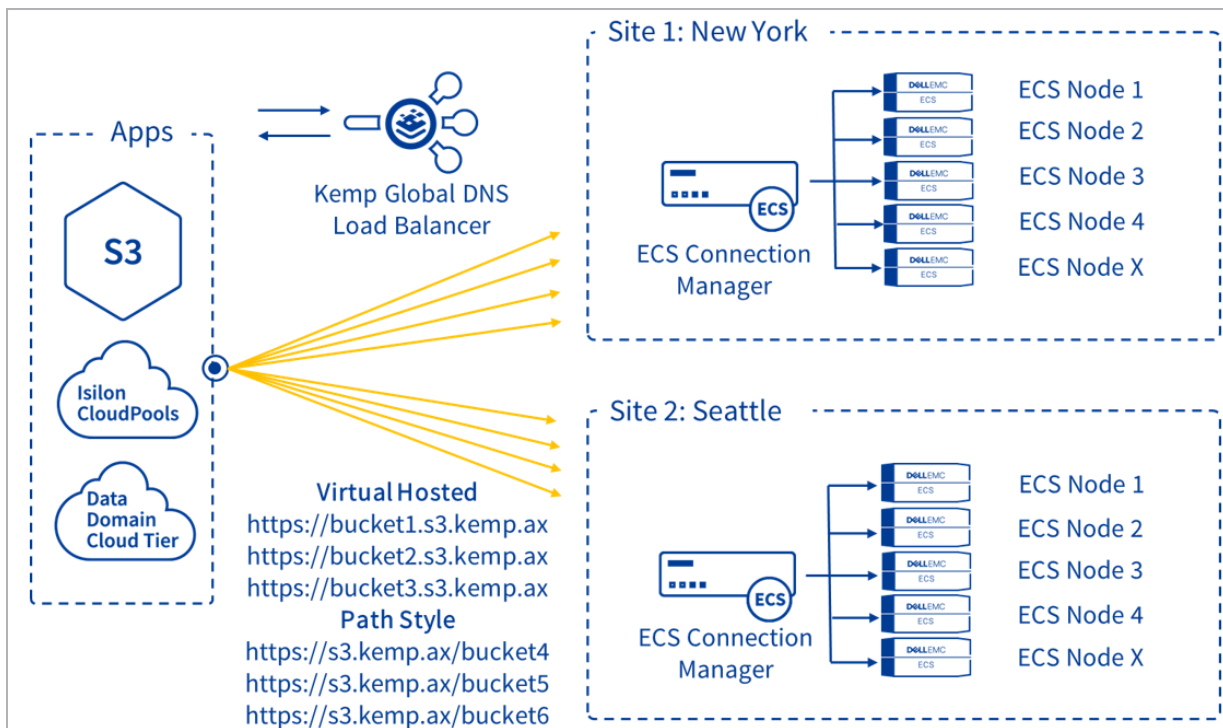
# 2 S3 Addressing Auto-Detection

ECS currently supports two addressing methods - Path Style and Virtual Hosted Addressing. In most ECS environments consisting of multiple sites that require the "XOR" storage efficiency and/or geographic distribution, the need to support both methods becomes essential. ECS Connection Manager delivers **S3 Addressing Auto-Detection** to simplify the configuration while providing the optimized distribution of objects throughout the ECS solution using both addressing methods seamlessly.



# 3 Dynamic Global Host Resolution

Most ECS deployments include multiple geographic locations providing the required site resilience for the object storage solution. ECS Connection Manager's Global Server Load Balancing (GSLB) feature distributes traffic across these multiple locations with the use of intelligent DNS. The implementation of GSLB will be different dependent on whether the applications accessing the storage leverage Path Style or Virtual Hosted addressing methods. This is due to behavior of Virtual Hosted which now includes the S3 bucket names within the HTTP Host Header requiring DNS to support this dynamic addressing method. ECS Connection Manager takes this requirement and extends it to support **Dynamic Global Host Resolution** within GSLB to provide the flexible multi-site distribution and availability for ECS deployments leveraging both Path Style and Virtual Hosted addressing.



# Last Updated Date

This document was last updated on 01 February 2022.