

Quest® On Demand Migration for Power BI

Security Guide



© 2024 Quest Software Inc. ALL RIGHTS RESERVED.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software Inc.

The information in this document is provided in connection with Quest Software products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest Software products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST SOFTWARE ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Quest Software makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest Software does not make any commitment to update the information contained in this document.

If you have any questions regarding your potential use of this material, contact:

Quest Software Inc.

Attn: LEGAL Dept
20 Enterprise, Suite 100

Aliso Viejo, CA 92656

Refer to our Web site (<https://www.quest.com>) for regional and international office information.

Patents

Quest Software is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at <https://www.quest.com/legal>.

Trademarks

Quest, the Quest logo, and Join the Innovation are trademarks and registered trademarks of Quest Software Inc. For a complete list of Quest marks, visit <https://www.quest.com/legal/trademark-information.aspx>. All other trademarks and registered trademarks are property of their respective owners.

Legend

 **CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.**

 **IMPORTANT, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

Contents

Introduction	1
About On Demand Migration for Power BI	2
Architecture overview	3
Authentication and Consents	4
Authentication of users	4
Quest On Demand Application Consent	4
Administrator Consent and Service Principals	6
Role based access control	9
Azure datacenter security	10
Overview of data managed by On Demand Migration for Power BI	11
Location of customer data	12
Privacy and protection of customer data	13
Separation of customer data	14
Network communications	15
FIPS 140-2 compliance	17
SDLC and SDL	18
Third Party assessments and certifications	19
Penetration testing	19
Certification	19
Operational security	20
Access to data	20
Permissions required to configure and operate On Demand Migration for Power BI	20
Operational monitoring	21
Production incident response management	21
Customer measures	23
About us	24
Technical support resources	24

Introduction

Managing information system security is a priority for every organization. In fact, the level of security provided by software vendors has become a differentiating factor for IT purchase decisions. Quest strives to meet standards designed to provide its customers with their desired level of security as it relates to privacy, confidentiality, integrity, and availability.

This document describes the security features of On Demand Migration for Power BI. This includes access control, protection of customer data, secure network communication, and cryptographic standards.

About On Demand Migration for Power BI

On Demand Migration for Power BI provides the following functionality in a robust project management interface with in-depth monitoring and reporting:

- Migrates Power BI workspaces, datasets, reports, and connections.
- Maps users and on-premise gateways.
- Migrates workspace permissions.

On Demand Migration for Power BI is hosted in Microsoft Azure and delivers most of its functions via Microsoft Azure cloud services.

Architecture overview

The following schema shows the key components of the On Demand Migration for Power BI configuration.

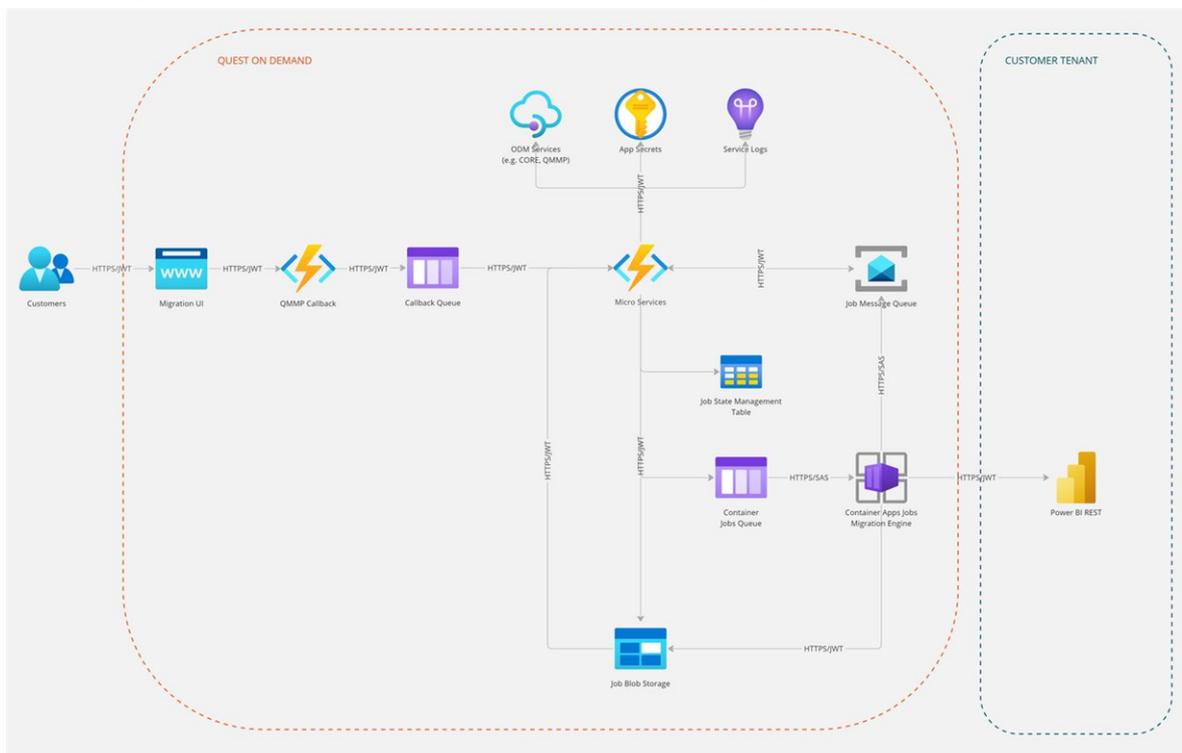


Figure 1: High-Level Architecture

Authentication and Consents

Authentication is required when you log on to On Demand. Authorization is the consent required to create and access an On Demand organization.

Authentication of users

User access to On Demand Migration for Power BI is authenticated with Microsoft Entra ID. Authenticating with Microsoft Entra ID offers inherent granular control and enables centralized configuration management. This method permits the configuration of advanced security layers using your own conditional access policies, including Multi-Factor Authentication (MFA), integration with Okta Inc., and other applications compatible with the Microsoft Authentication Library (MSAL).



The process of registering a Microsoft Entra ID tenant into On Demand Migration for Power BI is managed through the standard Azure Admin Consent workflow.

A Microsoft Entra ID access token (constrained to the Quest On Demand application) is obtained when the user navigates through the authentication process. This Microsoft Entra ID access token has a lifetime limit of 10 minutes after which it is automatically refreshed if the user is actively using the application. The user is automatically logged out following a period of inactivity. If the user token is revoked in Microsoft Entra ID, the user will continue to have access to On Demand until the token expires after 10 minutes. User access to the On Demand organization can be also revoked within On Demand by an On Demand Organization Administrator, resulting in access loss after token expiry.

Quest On Demand Application Consent

As part of the login process with Microsoft Entra ID, users must consent to the set of minimal permissions required by the Quest On Demand application. By default, all users are allowed to consent to applications for permissions that do not require administrator consent. This behavior might be deactivated in some Microsoft Entra ID tenants and may require tenant administrators to enable user consent flow for the Quest On Demand application.

The base consents required by Quest On Demand is shown below.



user1@organizationXYZ.onmicrosoft.com

Permissions requested



This app would like to:

^ View your basic profile

Allows the app to see your basic profile (e.g., name, picture, user name, email address)

This is a permission requested to access your data in OrganizationXYZ.

^ Maintain access to data you have given it access to

Allows the app to see and update the data you gave it access to, even when you are not currently using the app. This does not give the app any additional permissions.

This is a permission requested to access your data in OrganizationXYZ.

Consent on behalf of your organization

Accepting these permissions means that you allow this app to use your data as specified in their [terms of service](#) and [privacy statement](#). You can change these permissions at <https://myapps.microsoft.com>. [Show details](#)

Does this app look suspicious? [Report it here](#)

Cancel

Accept



NOTE:

- The ability to consent on behalf of your organization is available if logging in as the global administrator in the tenant.
- The ability to request consents will only be available if the global administrator has enabled the admin consent workflow. For more details see the article [How to enable the admin consent workflow](#).
- The verified publisher domain and permissions will be clearly labeled and detailed.

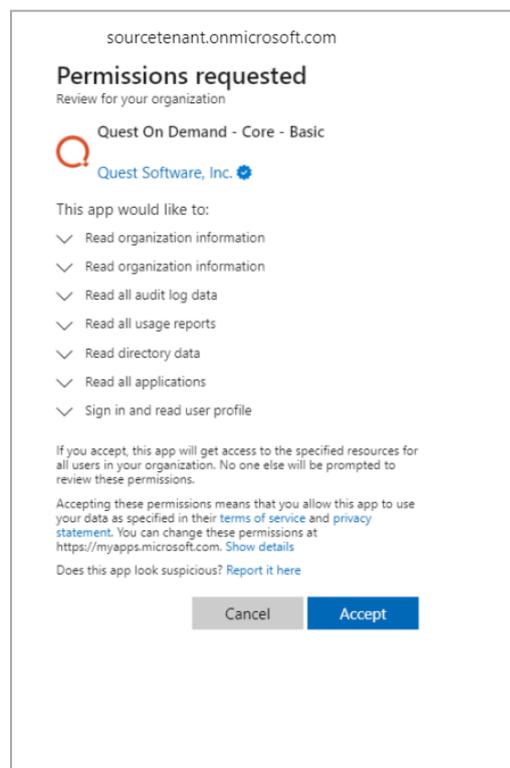
Administrator Consent and Service Principals

On Demand Migration requires access to the customer's Microsoft Entra ID and Office 365 tenancies. The customer grants that access using the Microsoft Admin Consent process, which will create a Service Principal in the customer's Microsoft Entra ID with minimum consents required by On Demand Migration for Power BI. The Service Principal is created using Microsoft's OAuth certificate based [client credentials grant flow](#).

Customers can revoke Admin Consent at any time. For more details, see <https://learn.microsoft.com/en-us/entra/identity/enterprise-apps/delete-application-portal> and <https://docs.microsoft.com/en-us/skype-sdk/trusted-application-api/docs/tenantadminconsent>.

The base consents required by Quest On Demand and all associated online services for both source and target tenants is shown below.

Quest On Demand - Core - Basic



On Demand Migration

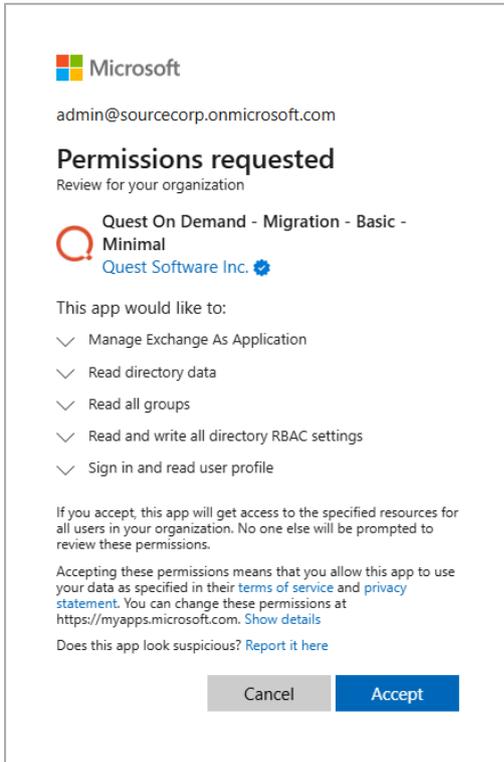
The base consent required by all On Demand Migration services is.

Quest On Demand - Migration - Basic - Minimal or **Quest On Demand - Migration - Basic - Full** consent for the source tenant.

Quest On Demand - Migration - Basic - Full consent for the target tenant.

The consents apps are as shown below:

Quest On Demand - Migration - Basic - Minimal



Microsoft
admin@sourcecorp.onmicrosoft.com

Permissions requested
Review for your organization

 **Quest On Demand - Migration - Basic - Minimal**
Quest Software Inc. 

This app would like to:

- Manage Exchange As Application
- Read directory data
- Read all groups
- Read and write all directory RBAC settings
- Sign in and read user profile

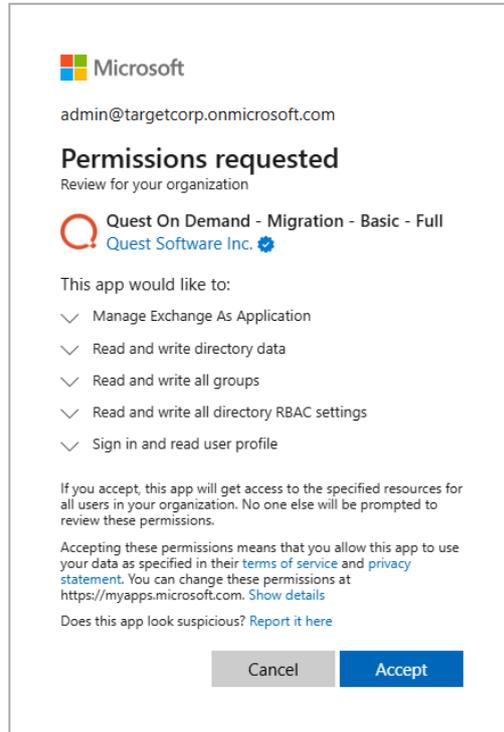
If you accept, this app will get access to the specified resources for all users in your organization. No one else will be prompted to review these permissions.

Accepting these permissions means that you allow this app to use your data as specified in their [terms of service](#) and [privacy statement](#). You can change these permissions at <https://myapps.microsoft.com>. [Show details](#)

Does this app look suspicious? [Report it here](#)

Cancel Accept

Quest On Demand - Migration - Basic - Full



Microsoft
admin@targetcorp.onmicrosoft.com

Permissions requested
Review for your organization

 **Quest On Demand - Migration - Basic - Full**
Quest Software Inc. 

This app would like to:

- Manage Exchange As Application
- Read and write directory data
- Read and write all groups
- Read and write all directory RBAC settings
- Sign in and read user profile

If you accept, this app will get access to the specified resources for all users in your organization. No one else will be prompted to review these permissions.

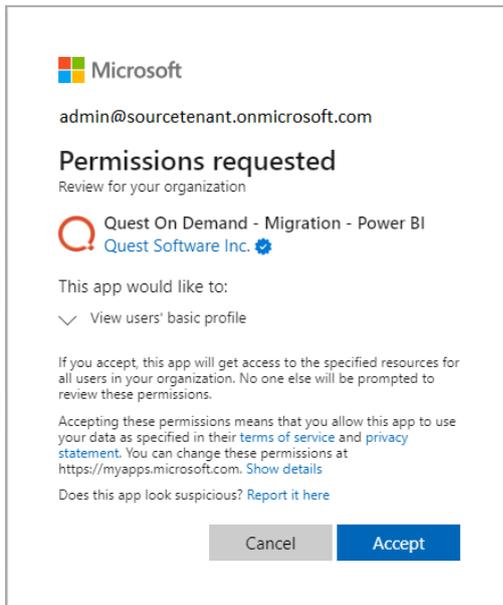
Accepting these permissions means that you allow this app to use your data as specified in their [terms of service](#) and [privacy statement](#). You can change these permissions at <https://myapps.microsoft.com>. [Show details](#)

Does this app look suspicious? [Report it here](#)

Cancel Accept

On Demand Migration for PowerBI

In addition to the base consents required by On Demand Migration, On Demand Migration for PowerBI requires the **Quest On Demand - Migration - Power BI** consent for both source and target tenants:



After creating the On Demand Migration for Power BI project, the On Demand Power BI service principal will be granted read access to Power BI tenant.

On Demand Migration for Power BI currently uses the Microsoft Power BI REST API, without needing global administrator permissions during migration. After the consent has been granted using a Power BI administrator, the administrator must also grant permissions for the app service principal to migrate workspaces. All migration operations will be driven by the token generated using app service principal.

The Admin Consent process for On Demand Migration for Power BI will create a Service Principal in the customer's Microsoft Entra ID tenant with the permissions described above.

Role based access control

Quest On Demand is configured with default roles that cannot be edited or deleted, and allows you to add custom roles to make permissions more granular. Each access control role has a specific set of permissions that determines what tasks a user assigned to the role can perform. For more information about role-based access control, see the [Quest On Demand Migration User Guide](#).

Azure datacenter security

Microsoft Azure datacenters have the highest possible physical security and are considered among the most secure and well protected datacenters in the world. They are subject to regular audits and certifications including Service Organization Controls (SOC) 1, SOC 2 and ISO/IEC 27001:2005.

Relevant references with additional information about the Windows Azure datacenter security can be found here:

- Microsoft Azure Trust Center: <https://azure.microsoft.com/en-us/overview/trusted-cloud/>
- Microsoft Trust Center Compliance: <https://www.microsoft.com/en-us/trust-center/compliance/compliance-overview?service=Azure#icons>
- Microsoft's submission to the Cloud Security Alliance STAR registry: <https://cloudsecurityalliance.org/star/registry/microsoft/>
- Whitepaper: Standard Response to Request for Information – Security and Privacy: <http://www.microsoft.com/en-us/download/details.aspx?id=26647>
- Microsoft Global Datacenters: Security & Compliance: <https://www.microsoft.com/en-us/cloud-platform/global-datacenters>
- Azure data security and encryption best practices: <https://docs.microsoft.com/en-us/azure/security/fundamentals/data-encryption-best-practices>

Overview of data managed by On Demand Migration for Power BI

On Demand Migration for Power BI manages the following type of customer data:

- Power BI workspaces. The content will passthrough our migration engine at migration time only. No workspace content will be stored after migration.
- Some source metadata may be stored by the product for troubleshooting purposes. This includes identifiers like workspace ID, report ID, dataset ID, user ID, etc.
- The product will store username and password of connection user profiles only for migration purposes. The data will be saved in a secure key vault and is encrypted at rest. For more information see the chapter [Privacy and protection of customer data](#)

Location of customer data

When a customer signs up for On Demand, they select the region in which to run their On Demand organization. All computation is performed and all data is stored in the selected region. The currently supported regions can be found here: <https://regions.quest-on-demand.com/>.

Windows Azure Storage, including the Blobs, Tables, and Queues storage structures, are replicated three times in the same datacenter for resiliency against hardware failure. The data is replicated across different fault domains to increase availability. All replication datacenters reside within the geographic boundaries of the selected region.

See this Microsoft reference for more details: <https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy>

Privacy and protection of customer data

The most sensitive customer data processed by On Demand Migration for Power BI is the Microsoft Entra ID and Power BI data including workspaces, datasets, reports, gateways, connections, users, and groups. On Demand Migration for Power BI does not store or deal with end-user passwords of Microsoft Entra ID objects.

- Power BI content may be cached temporarily during migration, but never stored after migration.
- Power BI will save passwords user have provided explicitly when creating connection profiles in secured Azure key vaults and encrypted at rest.
- Power BI metadata such as name, authorship and count of objects may be saved by product for troubleshooting purposes only. No actual content will be saved.
- All migration project data and logs are encrypted at rest.

To ensure that customer data is kept separate during processing, the following policies are strictly applied in On Demand Migration for Power BI:

- All temporarily artifacts created for each customer during migration is stored in separate Azure storage containers and will be saved for a maximum of 30 days for troubleshooting use. Temporary artifacts such as migration logs may contain metadata of objects, but never their content.
- This information is protected through the Azure built-in data-at-rest server-side encryption mechanism. It uses the strongest FIPS 140-2 approved block cipher available, Advanced Encryption Standard (AES) algorithm, with a 256-bit key.
- A separate Elasticsearch server instance is used for each customer.
- A separate isolated instance is used for every task.
- The integration of On Demand Migration for Power BI with [Quest Migration Manager for Active Directory](#) is secured by a secret that can be re-issued at any moment. Once re-issued, the original secret is immediately revoked.

More information about Azure queues, tables, and blobs:

- <https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blobs-introduction>
- <https://docs.microsoft.com/en-us/azure/security/security-storage-overview>
- <https://docs.microsoft.com/en-us/azure/storage/common/storage-service-encryption>

Separation of customer data

A common concern related to cloud-based services is the prevention of commingling of data that belongs to different customers. On Demand Migration for Power BI has architected its solution to specifically prevent such data commingling by logically separating customer data stores.

Customer data are differentiated using a Customer Organization Identifier. The Customer Organization Identifier is a unique identifier obtained from the Quest On Demand Core that is created when the customer signs up with the application.

This identifier is used throughout the solution to ensure strict data separation of customers' data in Elasticsearch storage and during processing.

A separate Elasticsearch server instance is used for each customer.

Network communications

Internal network communication within Azure includes:

- Inter-service communication between On Demand Migration for Power BI components, On Demand Core and the On Demand Platform
- Communication to customer Microsoft Entra ID tenants

The following scheme shows the communication configuration between key components of On Demand Migration for Power BI.

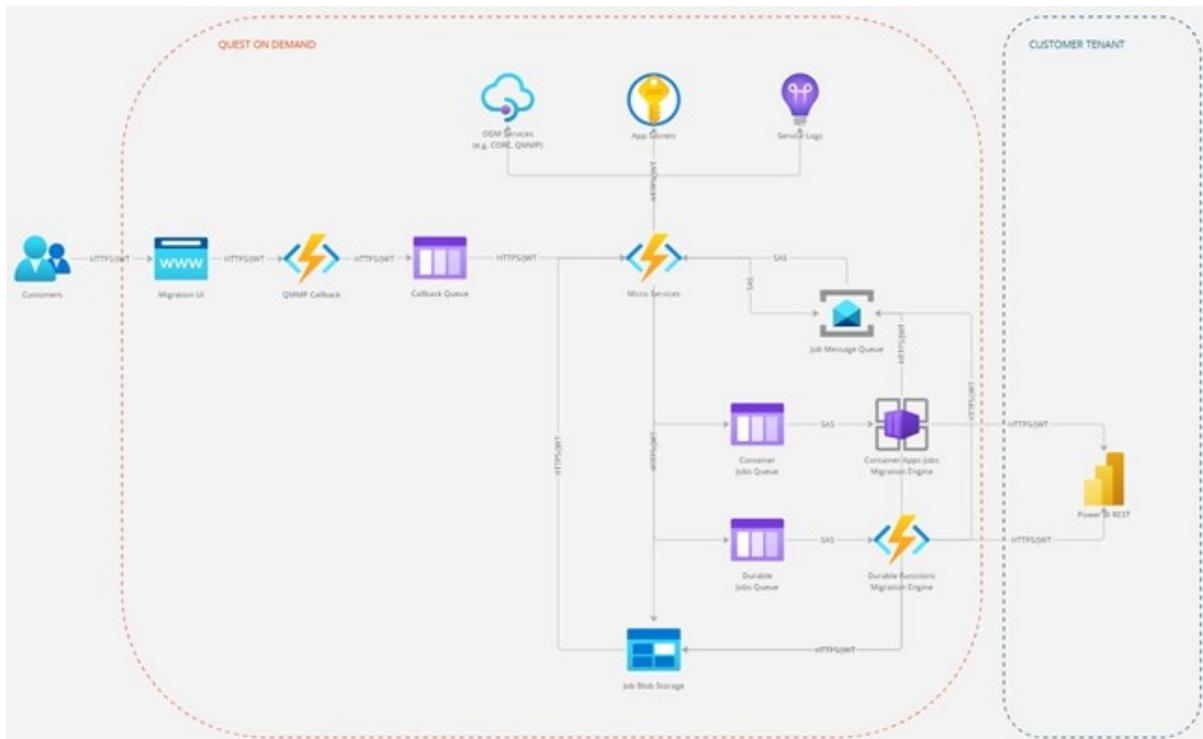


Figure 2: Component Communication Architecture

The network communication is secured with HTTPS and is not visible to the external public internet.

Inter-service communication uses OAuth authentication using a Quest Microsoft Entra ID service account with the rights to access the services. No backend services of On Demand Migration for Power BI can be used by end-users.

On Demand Services accepts the following network communication from outside Azure:

- Access to On Demand Migration web UI.
- PowerShell cmdlets to access the On Demand Migration for Power BI backend. These PowerShell cmdlets are used internally by Quest Support in read-only mode to access customers' Quest On Demand organizations, migration projects, tasks, events, and object metadata for troubleshooting purposes only.

All external communication is secured with HTTPS.

The On Demand Migration for Power BI user interface uses OAuth authentication with JWT token issued to a logged in user.

PowerShell cmdlets used by Quest Support are using Microsoft Entra ID authentication to access the On Demand Migration for Power BI service. The user of the PowerShell API should be a Quest Microsoft Entra ID member with the appropriate role assigned.

There are no unsecured HTTP calls within On Demand Migration for Power BI.

FIPS 140-2 compliance

On Demand Migration for Power BI cryptographic usage is based on Azure FIPS 140-2 compliant cryptographic functions. For more information, see: <https://docs.microsoft.com/en-us/azure/storage/blobs/security-recommendations>

SDLC and SDL

The On Demand team follows a strict Quality Assurance cycle.

- Access to source control and build systems is protected by domain security, meaning that only employees on Quest's corporate network have access to these systems. Therefore, should an On Demand developer leave the company, this individual will no longer be able to access On Demand systems.
- All code is versioned in source control.
- All product code is reviewed by another developer before check in.

In addition, the On Demand Development team follows a managed Security Development Lifecycle (SDL) which includes:

- MS-SDL best practices
- Threat modeling.
- OWASP guidelines.
- Automated static code analysis is performed on a regular basis.
- Automated vulnerability scanning is performed on a regular basis.
- Segregated Development, Pre-Production, and Production environments. Customer data is not used in Development and Pre-Production environments.

On Demand developers go through the same set of hiring processes and background checks as other Quest employees.

Third Party assessments and certifications

Penetration testing

On Demand has undergone a third party security assessment and penetration testing yearly since 2017. The assessment includes but is not limited to:

- Manual penetration testing.
- Static code analysis with Third Party tools to identify security flaws.

A summary of the results is available upon request.

Certification

On Demand is included in the scope of the Platform Management ISO/IEC 27001, 27017 and 27018 certifications:

- ISO/IEC 27001 Information technology — Security techniques — Information security management systems — Requirements: **Certificate Number: 1156977-3** valid until **2025-07-28**.
- ISO/IEC 27017 Information technology – Security techniques – Code of practice for information security controls based on ISO/IEC 27002 for cloud services: **Certificate Number: 1156977-3** valid until **2025-07-28**.
- ISO/IEC 27018 Information technology — Security techniques — Code of practice for protection of personally identifiable information (PII) in public clouds acting as PII processors: **Certificate Number: 1156977-3** valid until **2025-07-28**.

Quest Software, Inc. has successfully completed a SOC 2 examination of its On Demand solution. The examination was performed by an independent CPA firm for the scope of service described below:

Examination Scope: **Quest On Demand Platform**

Selected SOC 2 Categories: **Security**

Examination Type: **Type 2**

Review Period: **August 1, 2022 to July 31st, 2023**

Service Auditor: **Schellman & Company, LLC**

Operational security

Source control and build systems can only be accessed by Quest employees on Quest's corporate network through domain security. If a developer or any other employee with access to On Demand Migration including On Demand Migration for Power BI leaves the company, the individual immediately loses access to the systems.

All code is versioned in source control.

Access to data

Access to On Demand Migration for Power BI data is restricted to:

- Quest Operations team members
- Quest Support team members working closely with On Demand Migration product issues. Support team members will have read-only access to customer's Quest On Demand organizations, projects, tasks, events, and object metadata for troubleshooting purposes only
- The On Demand Migration for Power BI development team to provide support for the product

Access to On Demand Migration for Power BI data is restricted through the dedicated Quest Microsoft Entra ID security groups. For different types of data (e.g., product logs, customer data, and sensitive data) different access levels and lists of allowed people are assigned.

Permissions required to configure and operate On Demand Migration for Power BI

Quest Operations team members have access to the Quest's production Azure Subscription and monitor this as part of normal day to day operations. On Demand Migration for Power BI developers have no access to Quest's production Azure subscription.

To access On Demand Migration for Power BI, a customer representative opens the On Demand website and signs up for an On Demand account. The account is verified via email; thus a valid email address must be provided during registration.

An organization is automatically created once the new account is created.

Prerequisites:

Microsoft Entra ID Global Administrator must give the Admin Consent to provision On Demand Migration for Power BI for the customer's Microsoft Entra ID with the following permissions:

Microsoft Graph

- Read all groups
- Read and write all groups

- Read and write directory data
- Read directory data

Microsoft Entra ID

- Read and write directory data
- Read directory data

OAuth 2.0 Permission Grants

Microsoft Graph

- Access directory as the signed in user
- Read all groups
- Read and write all groups
- Read and write directory data
- Read directory data

Microsoft Entra ID

- Read all groups
- Read and write all groups
- Read and write directory data
- Read directory data
- Sign in and read user profile

[Microsoft Graph permissions reference - Microsoft Graph | Microsoft Docs](#)

Operational monitoring

On Demand Migration for Power BI internal logging is available to Quest Operations and On Demand Migration for Power BI development teams during the normal operation of the platform. Personally Identifiable Information (PII) data can become a part of internal logging for troubleshooting purposes.

The recorded information includes date and time, actor, a description and customized fields of the event but no details about the content of the data migrated.

The On Demand solution leverages Azure App Insight to collect all environment and application specific logs, auditing of user activities, system, and system administration activities. The logs are encrypted at rest starting in Application Insight and Azure tables then written to WORM storage within Azure to prevent tampering.

A *customer only* log is used when an error occurs which contains the Title of the object migrated . This information is only visible to customers and can be used to ease Customer Support Request troubleshooting. This feature is optional and can be turned off completely by the customer but as a consequence only GUID/ID will be available to determine which migrated data faced the error and can thus make troubleshooting much harder.

Production incident response management

Quest Operations and Quest Support have procedures in place to monitor the health of the system and ensure any degradation of the service is promptly identified and resolved. On Demand Migration for Power BI relies on Azure infrastructure and as such, is subject to the possible disruption of these services.

- Quest On Demand services status page is available at <https://status.quest-on-demand.com/>
- Azure services status page is available at <https://azure.microsoft.com/en-ca/status/>

Customer measures

On Demand Migration for Power BI security features are only one part of a secure environment. Customers must implement their own security practices when proceeding with data handling. Special care needs to be given to protecting the credentials of the Microsoft Entra ID tenants global administrator accounts and Office 365 tenants global administrator accounts.

Quest creates software solutions that make the benefits of new technology real in an increasingly complex IT landscape. From database and systems management, to Microsoft Entra ID and Office 365 management, and cyber security resilience, Quest helps customers solve their next IT challenge now. Around the globe, more than 130,000 companies and 95% of the Fortune 500 count on Quest to deliver proactive management and monitoring for the next enterprise initiative, find the next solution for complex Microsoft challenges and stay ahead of the next threat. Quest Software. Where next meets now. For more information, visit www.quest.com.

Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product