Prophecy Installation Considerations

There are several options available for installing and running the **Prophecy IoT®** solution. It is designed to be flexible, robust, and highly adaptable to meet our customers' business needs and objectives. As such, the Prophecy IoT® product can be installed on-premises using existing server infrastructure or by leveraging- cloud-based infrastructure like AWS or Azure. Specifications for each environment type can be found below.

We are available to discuss the following and answer any questions:

SSL/TLS Certificate Specifications

- Prophecy and the authentication application each require their own URL. Subdomains such as auth.customersite.com and prophecy.customersite.com are typically used
- Therefore, an SSL/TLS certificate (such as a wildcard certificate) is required to be installed

Workstation Computers/Tablets for Operators and Plant Personnel to interface with Prophecy

- HTML 5 compatible
- Recommend 16x10 ratio screens
- PC or touch-screen tablets
- Considerations for very dirty environments, as well as touch screens for users with gloves, may be needed

Optional TV/Monitors for Andon Board visualization

- Placement at strategic locations providing performance analytics and Key Metrics.
- HTML 5 compatible

Optional Considerations

- Plan for data backup/redundancy
- Cold/Warm/Hot standby options for disaster recovery
- Additional Windows and/or SQL Server seats depending on who will need access

On-premises Recommendations

- Server/VM for installation of the Prophecy IoT platform

- Microsoft SQL Server 2019 or later (Standard is preferred; Express may suffice in some cases)

- Microsoft Windows Server 2019 or later

- 32 GB RAM

- 8-core processor (8 vCPUs if virtualized)

- 256 GB disk (SSD recommended)

Notes for On-premises:

- Virtual machines are recommended but not required; the Prophecy software can also run on a stand-alone server.

- MSSQL is required to run the Prophecy software. SQL Server can be installed on the same machine as Prophecy, or—if existing SQL Server infrastructure and licensing are available—the Prophecy databases can leverage those resources.

- Virtualization in the BIOS of the server should be enabled to ensure that the server can run containerized applications.

Cloud Hosting Recommendations

Notes for Cloud Hosting: The below specifications are a general recommendation. More or fewer resources may be recommended after the initial evaluation of the implementation has been completed and server resource load has been evaluated.

Considerations for Cloud Hosting

When hosting in the cloud, it is recommended to place at least one edge device at each location to collect machine data.

Edge Device Specifications

- Quad Core processor

- 16 GB RAM

- 128 GB RAM

- Windows or Linux (Linux preferred, but Windows IoT may be recommended in some instances)

- If running Windows, virtualization is required to be enabled to allow running containerized applications

AWS Option 1 - High Availability - Specifications (Recommended for AWS)

- T3.xlarge VM - Windows 2019 Server or later

    o 4 vCPUs

    o 16 GiB RAM

- 128 Gb disc per instance

- Security group with port 443 enabled (other ports may be required based on implementation)

- VMs are required to be load-balanced, and an auto-scaling group is recommended

    o 1 minimum instance

    o 2 maximum instances (*recommendation may vary based on the number of sites/machines*)

- o Dynamic scaling rules based on CPU and memory utilization (80%)

    - ▪ Requires setup using Cloud Watch

AWS Option 2 – Single VM - Specifications

- T3.2xlarge VM - Windows 2019 Server or later (recommendation may vary based on the number of sites/machines)

    - o 8 vCPUs

    - o 32 GiB RAM

- 128 Gb disc per instance

AWS SQL Server Options

When hosting Prophecy IoT® in an AWS cloud environment, there are a few options available for running SQL. These options are available when using the high availability option or the single VM option.

- AWS RDS for MSSQL (preferred)

- EC2 VM hosting MSSQL

AWS RDS Specs

- db.t3.xlarge (*recommendation may vary based on the number of sites/machines*)

    - o 4 vCPUs

    - o 16 GiB RAM

- 1 instance minimum

EC2 SQL VM

- T3.xlarge VM Windows 2019 Server with SQL Server Web

    - o 4 vCPUs

    - o 16 GiB RAM

- 1 Instance minimum

Azure Option 1 - High Availability - Specifications (Recommended for Azure)

- D series VM Scale Set - Windows 2019 Server or later
    - 4 vCPUs
    - 16 GiB RAM
- 128 Gb disc per instance
- Network security group with port 443 enabled (other ports may be required based on implementation)
- VM Scale Sets are required to be load balanced, and auto-scaling rules are recommended
    - 1 minimum instance
    - 2 maximum instances (*recommendation may vary based on the number of sites/machines*)
    - Dynamic scaling rules based on CPU and memory utilization (80%)

Azure Option 2 – Single VM - Specifications

- D series - Windows 2019 Server or later (recommendation may vary based on the number of sites/machines)
    - 8 vCPUs
    - 32 GiB RAM
- 128 Gb disc per instance

Azure SQL Server Options

When hosting Prophecy IoT® in an Azure cloud environment, there are a few options available for running SQL. These options are available when using the high availability option or the single VM option.

- Azure SQL Managed instance (preferred)
- D series VM hosting MSSQL

Azure SQL Specs

- General purpose

- 4 vCore

- 1 instance minimum

SQL VM

- T3.xlarge VM Windows 2019 Server with SQL Server Web

  - 4 vCPUs

  - 16 GiB RAM

- 1 Instance minimum