Multiple Server with HA Installation Checklists

WE ARE CORTEX

Overview

This document is designed to help confirm that all the different parts of the CORTEX installation process have been completed based on the installation documentation.
These parts have been grouped into three checklists below:

- Requirements – A list of checks that need to be completed before the installation starts
- Pre-Installation - A list of steps that need to be completed at the start of the installation to ready the server
- Installation – A list of steps to complete the installation of CORTEX

As there are different options for the installation to suit the different needs of customer environments, some of the below checklists have "**EITHER** and **OR**" statements. The related checks will be grouped in these statements for clarity

Requirements

These requirements checklists will guide you through the requirements needed for a CORTEX Multiple Server with HA installation. If you are installing a Single Server without HA, please see this page - https://docs.wearecortex.com/docs/latest/getting-started/on-premise/install-innovation-only/single-server-without-ha/
This document is intended to be run alongside your installation and can be checked off as requirements are met.

Hardware Requirements

The following checklist is based on our Hardware Requirements found here
Hardware Requirements

- ☐ HA Architecture (Bronze Availability) confirmed
- ☐ 3 Windows Servers available for Application Servers
- ☐ 1 Windows Server available for Web Application Server
- ☐ Hardware meets at least the minimum required specification for each server
- ☐ A valid Load Balancer is available
    - **EITHER**
    - ☐ If using provided GoBetween, a separate Windows Server is available
    - **OR**
    - ☐ 3rd Party Load Balancer available:
        - ☐ Supports round robin (or similar) load balancing to specified ports on 3 nodes
        - ☐ Must be able to health check each node by running a predefined batch script
        - ☐ Must be able to access each of the Application Servers via HTTPS
        - ☐ Supports UDP to use the SNMP functionality of the Triggers Service
        - ☐ Highly available to avoid a single point of failure in the system

Software Requirements

The following checklist is based on our Software Requirements found here
Software Requirements

- ☐ Windows Server 2019/2022 is installed on all servers
- ☐ .Net Framework 4.7.2 or greater installed on all servers
- ☐ PowerShell 5.1 installed on all servers [i]
- ☐ IIS Installed or available on the Web Application server
- ☐ All Servers are on a Windows-based domain and are **NOT** a domain controller
- ☐ Active Directory is Windows Server 2003 or later
- ☐ IPv4 available to use
- ☐ PTR or reverse lookup records are available in DNS for all servers
- ☐ Either Chrome, Edge or Firefox web browser is available
- ☐ Network Discovery and File Sharing has been enabled on all servers
- ☐ The following Windows services are enabled and running on all servers
    - ☐ Performance Logs & Alerts
    - ☐ Remote Registry
    - ☐ Windows Event Log
- ☐ A domain user is available to perform the installation, and it is a member of the Local Administrators group on all servers
- ☐ A domain user is available to run the CORTEX Gateway IIS application pool [1]
    - ☐ This user has **Log on as a service** permission on the Web Application server
    - ☐ This user has **Log on as a batch job** permission on the Web Application server
- ☐ Antivirus Exclusions have been added as per documentation [2]
- ☐ Required ports are opened on the server [3]

[1] These permissions are granted during install, but may be overridden by Group Policy
[2] This is done as a part of the installation if using Windows Defender
[3] These ports are opened as a part of the installation process if using Windows Defender

Certificate Requirements

The following checklist is based on our Certificate Requirements found here
Certificate Requirements

☐ A valid certificate is available for the installation

EITHER

☐ I am using CORTEX generated Self-Signed Certificate (Non-Production only)

OR

☐ I have a CA (Certificate Authority) X.509 certificate in a .PFX file with the full certificate chain

EITHER

☐ I am using a multi-domain certificate

☐ My certificate subject name is the FQDN of the Load Balancer OR an Application Server

☐ The SANs lists the FQDNs, hostnames and IPs of all Application Servers

☐ If the same certificate is being used for both the Application Servers and the Web Application Server, the Web Application server FQDN, hostname and IP is also included

OR

☐ I am using a wildcard certificate

☐ The certificate subject is a domain wildcard

☐ My certificate file includes the Private Key

☐ My certificate Key Usage extension has a value of **Digital Signature, Key Encipherment (a0)**

☐ My certificate Enhance Key Usage includes **Server Authentication** and **Client Authentication**

☐ I know the password for the .PFX file

Pre-Installation

Prior to installing to CORTEX, it is required that some steps are taken to prepare the server for the installation.

Make Installation Artefacts Available

- ☐ Make Installation Artefacts available – Steps here
    - ☐ Cortex Innovation <VERSION> - App Server Install Scripts.zip
    - ☐ Cortex Innovation <VERSION> - App Services.zip
    - ☐ Cortex Innovation <VERSION> - Block Packages.zip
    - ☐ Cortex Innovation <VERSION> - Encryption Key Generator.zip
    - ☐ Cortex Innovation <VERSION> - Encryptor.zip
    - ☐ Cortex Innovation <VERSION> - Gateway.zip
    - ☐ Cortex Innovation <VERSION> - Licence Fingerprint Generator.zip
    - ☐ Cortex Innovation <VERSION> - Web App Server Install Scripts.zip
- ☐ App Server Install Scripts extracted
- ☐ Unblocked Pre-Installation Script
- ☐ Executed the Pre-Installation script

Obtain CORTEX Licence

- ☐ Machine ID and Fingerprints generated
- ☐ CORTEX Licence and Feature Identifier requested
- ☐ Obtained a CORTEX Licence and Feature Identifier

Generate Encryption Key

- ☐ Encryption Key Set
- ☐ Encryption Key Backed up

Installation

Application Servers and Load Balancer

The following checklist is based on installation instructions found here

Install Application Servers and Load Balancer

- ☐ .NET Framework 4.7.2 installed
- ☐ Recommended Security Measures Applied and Server Restarted

- ☐ Antivirus Exclusions Added
  - **EITHER**
  - ☐ CORTEX script for Windows Defender used
  - **OR**
  - ☐ Manually added to third-party antivirus

- ☐ Port Usage script run successfully
- ☐ Installation Script configured
  - ☐ AppServicesPath configured
  - ☐ BlockPackagesPath configured
  - ☐ ApiGatewayBasicAuthUsername provided
  - ☐ ApiGatewayBasicAuthPassword provided and encrypted
  - ☐ CustomerName provided
  - ☐ ApplicationServerIPv4Addresses configured

  - ☐ Certificate Parameters configured
    - **EITHER**
    - ☐ using CA Certificates
      - ☐ ServerCertificatePath directs to certificate file (.pfx)
      - ☐ Encrypted password provided for ServerCertificatePassword
      - ☐ ClientCertificatePath directs to certificate file (.pfx)
      - ☐ Encrypted password provided for ClientCertificatePassword
    - **OR**
    - ☐ using Self-Signed Certificate
    - ☐ UseSelfSignedCertificates parameter included

  - ☐ If using Alternative Loadbalancer, SkipLoadBalancer parameter included
  - ☐ Credential parameter left as default
  - ☐ LDAP Connection Information configured
    - ☐ LDAP URL configured to point at domain
    - ☐ UseSSL set to true or false as needed
    - ☐ Encrypted Username and Password configured for dedicated query account
  - ☐ AcceptEula parameter left as default
- ☐ Installation Script saved
- ☐ Installation script tested with -WhatIf switch
- ☐ Installation Script run successfully

- ☐ Service Fabric available with no errors reported
    - ☐ Certificate installed into Current User certificate store
    - ☐ Service Fabric Explorer opened via local browser
    - ☐ No errors or warnings are reported
- ☐ Installation Files are archived for future use

Web Application Server

The following checklist is based on installation instructions found here

Install Web Application Server

Pre-requisites

- ☐ Cortex Licence has been uploaded to the correct location
- ☐ Gateway Application Pool user is NOT an Administrator
- ☐ Folder permissions granted to Gateway Application Pool user
    - ☐ System32
    - ☐ SysWOW64

EITHER

- ☐ Certificate already imported with friendly name assigned

OR

- ☐ Certificate will be imported during installation

Install Flow Debugger

- ☐ .NET Framework 4.7.2 installed

- ☐ Antivirus Exclusions Added

    EITHER

    - ☐ CORTEX script for Windows Defender used

    OR

    - ☐ Manually added to third-party antivirus

- ☐ Port Usage script run successfully
- ☐ Installation Script configured
    - ☐ AppServicesPath configured
    - ☐ BlockPackagesPath configured
    - ☐ ApiGatewayBasicAuthUsername provided
    - ☐ ApiGatewayBasicAuthPassword provided and encrypted
    - ☐ CustomerName provided
    - ☐ ApplicationIPv4Addresses (singular address) configured

    - ☐ Certificate Parameters configured

        EITHER

        - ☐ Using CA Certificates
            - ☐ ServerCertificatePath directs to certificate file (.pfx)
            - ☐ Encrypted password provided for ServerCertificatePassword

        OR

- ☐ Using Self-Signed Certificate
  - ☐ UseSelfSignedCertificates parameter included

- ☐ SkipLoadBalancer parameter included
- ☐ Credential parameter left as default
- ☐ LDAP Connection Information configured
  - ☐ LDAP URL configured to point at domain
  - ☐ UseSSL set to true or false as needed
  - ☐ Encrypted Username and Password configured for dedicated query account
- ☐ AcceptEula parameter left as default

☐ Installation Script saved
☐ Installation script tested with -WhatIf switch
☐ Installation Script run successfully
☐ Required permissions added to Windows Crypto folder
☐ Service Fabric available with no errors reported
- ☐ Certificate installed into Current User certificate store
- ☐ Service Fabric Explorer opened via local browser
- ☐ No errors or warnings are reported

☐ Installation Files are archived for future use

Install Gateway

☐ CORTEX Gateway Installation script configured
- ☐ GatewayPackagePath configured
- ☐ FeatureFlags has been configured with Feature Identifier as provided by CORTEX Service Portal
- ☐ ServiceFabricAPIGatewayEndpoint configured

- ☐ ServiceFabricUsingSelfSignedCertificates Parameter configured

  EITHER

  ☐ If using CA Certificates
    - ☐ ServiceFabricUsingSelfSignedCertificates set to False

  OR

  ☐ If using Self Signed Certificates
    - ☐ ServiceFabricUsingSelfSignedCertificates set to True

- ☐ ServiceFabricApiGatewayBasicAuthUsername provided and encrypted
- ☐ ServiceFabricApiGatewayBasicAuthPassword provided and encrypted
- ☐ DotNetFlowDebuggerEndpoint configured
- ☐ DotNetFlowDebuggerBasicAuthUsername provided and encrypted
- ☐ DotNetFlowDebuggerBasicAuthPassword provided and encrypted

- ☐ DotNetFlowDebuggerUsingSelfSignedCertificates set

  EITHER

  ☐ If using CA Certificates
    - ☐ DotNetFlowDebuggerUsingSelfSignedCertificates set to False

  OR

- ☐ If using Self Signed Certificates
  - ☐ DotNetFlowDebuggerUsingSelfSignedCertificates set to True

- ☐ GatewayApplicationPoolUsername specified
- ☐ WebRootFolder configured
- ☐ WebsitePort configured

- ☐ ImportCertificate configured
  - **EITHER**
  - ☐ using already imported CA Certificate
    - ☐ ImportCertificate set to false
  - **OR**
  - ☐ using different CA Certificate
    - ☐ ImportCertificate set to True

- ☐ Certificate Parameters configured
  - **EITHER**
  - ☐ ImportCertificate is false
    - ☐ CertificateFilePath left as default
    - ☐ CertificateFriendlyName configured as per imported certificate
  - **OR**
  - ☐ ImportCertificate is True
    - ☐ CertificateFilePath configured to .PFX certificate file location
    - ☐ CertificateFriendlyName is configured with required friendly name
    - ☐ ConfigureSiteRedirect setIf site redirect is required
- **EITHER**
- ☐ ConfigureSiteRedirect set to True
- **OR**
- ☐ ConfigureSiteRedirect set to False

- ☐ Apply Security Measures set to True
- ☐ Using Windows Defender set to True if applicable
- ☐ All other parameters left as default

☐ Install script saved
☐ Install Script run successfully
☐ CORTEX Gateway opened in a local browser
☐ Additional Folder Permissions granted
- ☐ CORTEX Blocks Provider Host
- ☐ CORTEX Repo

☐ IIS Reset performed
☐ Installation folders archived for future use

Setup Gateway

☐ Default Administrator password changed
☐ LDAP Connection Set

- ☐ LDAP Connection User is a dedicated service account
- ☐ LDAP Authorisation Set

Try it Out

The following checklist confirms that all the "Try it out" steps have been completed successfully

- ☐ Test Debugging Flows
  - ☐ Created a flow
  - ☐ Added and configured blocks
  - ☐ Flow executed and results displayed
  - ☐ Flow committed
- ☐ Test Publishing Production Flows
  - ☐ Packages page opened
  - ☐ New package created
  - ☐ Package published
- ☐ Test Executing Production Flows
  - ☐ Suitable HTTP client identified
  - ☐ REST call configured
  - ☐ REST call successfully run

[i] Shipped with Windows Server 2019/2022