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CelestixEdge VE Series Appliance Installation Guide

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CelestixEdge VE Series Appliance Installation Guide

Document Number: VEDG2100-120-002

Updated: November 13, 2015

Part Number: (CCD) 2102-30800001

Product version: VE Series 2.1

Table of Contents

Introduction

Celestix Networks delivers an exceptional combination of perimeter security features, scalability, and simplicity in cost-efficient virtual and hardware appliances. Ready-to-deploy appliances offer easier management that reduces the risk and cost of security solutions. The Celestix® line of security appliances provides key security framework components: firewall, branch-office connectivity, web cache/proxy, wireless policies/authentication, remote access, two-factor authentication, patch management, and anti-spam/anti-virus gateway deployments. Celestix products provide the best option for the emergent need to manage IT security for every level of infrastructure complexity.

The Celestix® CelestixEdge VE Series Appliance provides simplified configuration for diverse remote access and desktop virtualization needs. The VE Series delivers secure connectivity to an organization's network and cloud resources with Microsoft® Windows Server® 2012 R2 Remote Access. Supporting technologies include access management, bring your own device (BYOD) facilitation, and anywhere access to work files.

A well-planned BYOD blueprint can help users to work how and when they are most productive. Through the VE Series, organizations can choose the connectivity options best suited to organizational goals.

- Always-on remote connection for both end user access and client management.
- RADIUS and multifactor authentication.
- Encrypted access to internal resources without a VPN.
- Streaming access to hosted applications from any device.
- Synced work files access by supported devices from wherever, even without network connectivity.

The foundation of your Celestix virtual appliance is the award-winning Comet engine. Comet provides a web user interface (web UI) for convenient access to administration functions like setup, network configuration, and server task management. For the VE Series, it also provides simplified installation and configuration for Remote Access and supporting technologies.

The product installs as a trial version. A license activation key must be purchased from Celestix and uploaded to the virtual appliance before the 30-day trial period ends.

The Celestix VE Series is a hardened and secure virtual appliance platform that is optimized for secure Windows deployment.

The 2.1VE Series offers the following functionality:

- Web Application Proxy single sign-on portal
- SIEM support
- DirectAccess configuration updates

Guide Usage Notes

This guide will help system administrators to efficiently install and configure a new virtual appliance with a base level setup. The instructions cover steps for some common deployment scenarios. They usually offer one option to accomplish a task, though there may be other ways to achieve the same thing. The guide does not provide extensive reference information. Online help in the web UI can usually provide additional information.

Document Conventions

- Using a PDF viewer besides Adobe® Reader® may disable some of this document's functionality and may change how the content displays.
- Instructions are generally intended for administrators to manage the server installation through Comet's web user interface administration tool, referred to as the web UI.
- Instructions are presented in the best order to follow for setup.
- The following text formats are used for clarification:
  - Web UI on-screen items are noted in this **style**.
  - File names are delineated as filename.xxx.
  - Titles are delineated as *documentname*.
  - Examples and code are delineated in this `style`.
- When referring to subsections in this document, the hierarchy is delineated by the symbol for a colon (:).

  For example, the location of the section *To find updates* would be delineated as:

  Update Software : *To find updates*.
- Instructions assume the reader will navigate from the web UI main menu bar to access features.

  For example, to access Software Updates, the navigation path from the menu bar would be delineated as:

  System|**Software Updates**.
- Though network interface connections are commonly referred to as NICs, ports, and adapters, documentation uses the term *network adapters*.
- Documentation generally refers to the *virtual appliance* when discussing the VE Series Appliance.

Web User Interface

The web UI is a management tool to access the most common Celestix product features. Initially, use it to quickly set up the server. Subsequently, use the web UI to access administrative features for both Comet and Remote Access roles.

See the Appendix topic Web User Interface Content Overview for features included in the web UI. See the online help topic *Web User Interface Overview* for more information about using the web UI (**Help|Web UI Overview**).

System Overview

The CelestixEdge virtual appliance simplifies the process to set up and manage access to IT resources. The diagram below provides a reference for features that are available on the appliance.

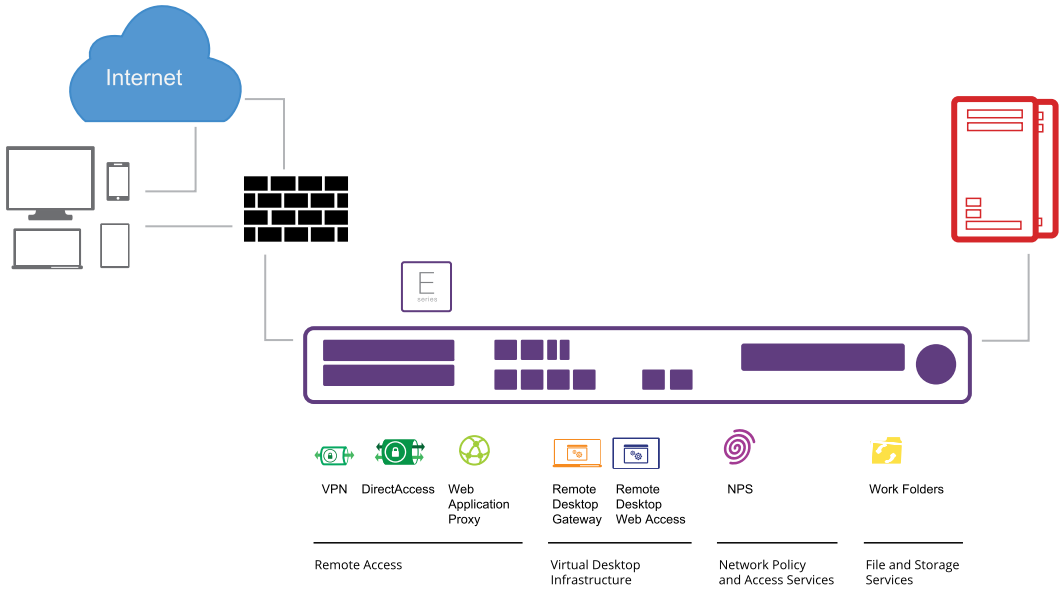


Illustration 1: E Series Connectivity Features

Example Deployment Topologies

The diagrams that follow are intended to provide reference for IT administrators or architects. The examples provide a few scenarios for common aspects of CelestixEdge virtual appliance deployment, while the potential options are certainly numerous.

DirectAccess Deployment with Manage-Out

Access for external users with strong authentication that allows system administrators to support and manage remote clients.

Requirements:

- Secure remote access for managed Windows 7 and Windows 8 clients.
- Anytime, anywhere access to applications and data on the organization network.

- Compliance mandate for One-Time Password (OTP) authentication.
- System administrators inside the organization network need connectivity to initiate remote desktop sessions and push software updates to remote clients.

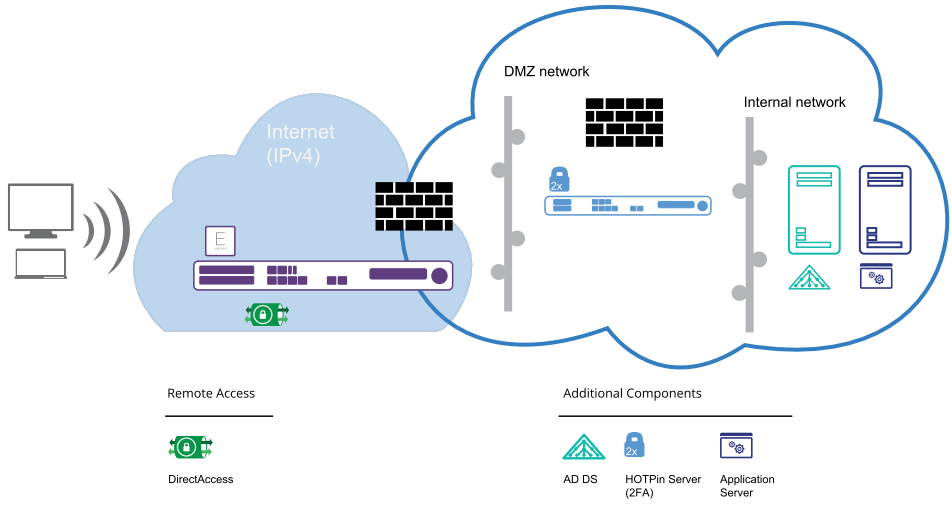


Illustration 2: DirectAccess Role

VPN

Access for external users that includes a wide range of systems, like PCs, Macs, tablets, and smart phones.

Requirements:

- Secure remote access for nonmanaged clients that include commonly used operating systems (Windows, Linux, OS X, Android, and iOS).
- Remote access to applications and data on the organization network.
- Web-based applications need users to be pre-authenticated at the edge.
- Applications individually provisioned based on user roles.

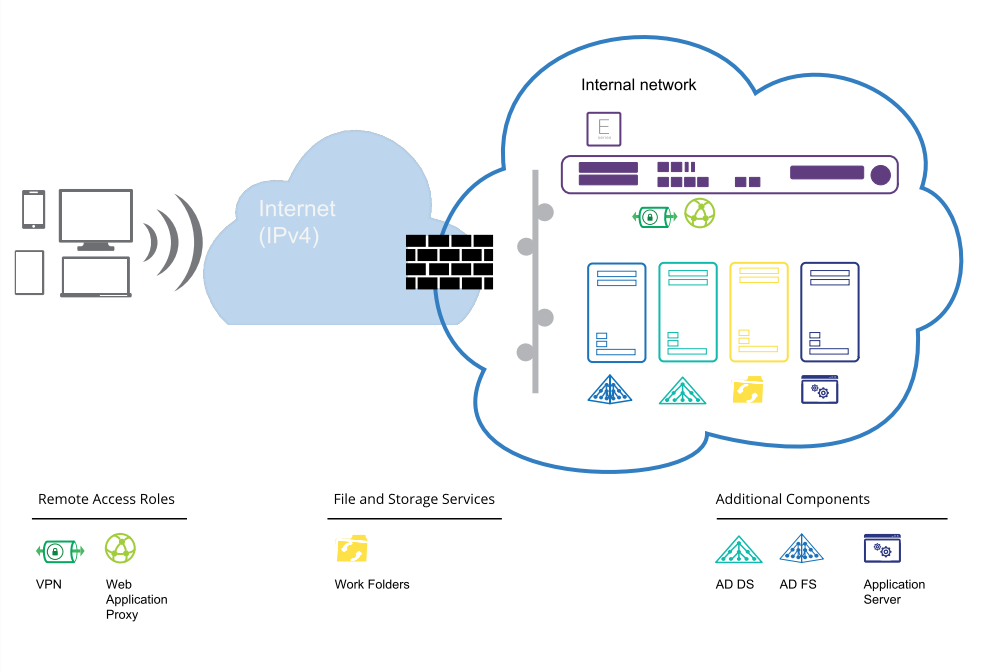


Illustration 3: VPN Role With Web Application Proxy

Gateway

Cross-premises network connectivity for internally hosted and cloud resources.

Requirement: Seamless connectivity between on-premises data center and virtual machines hosted in the public cloud.

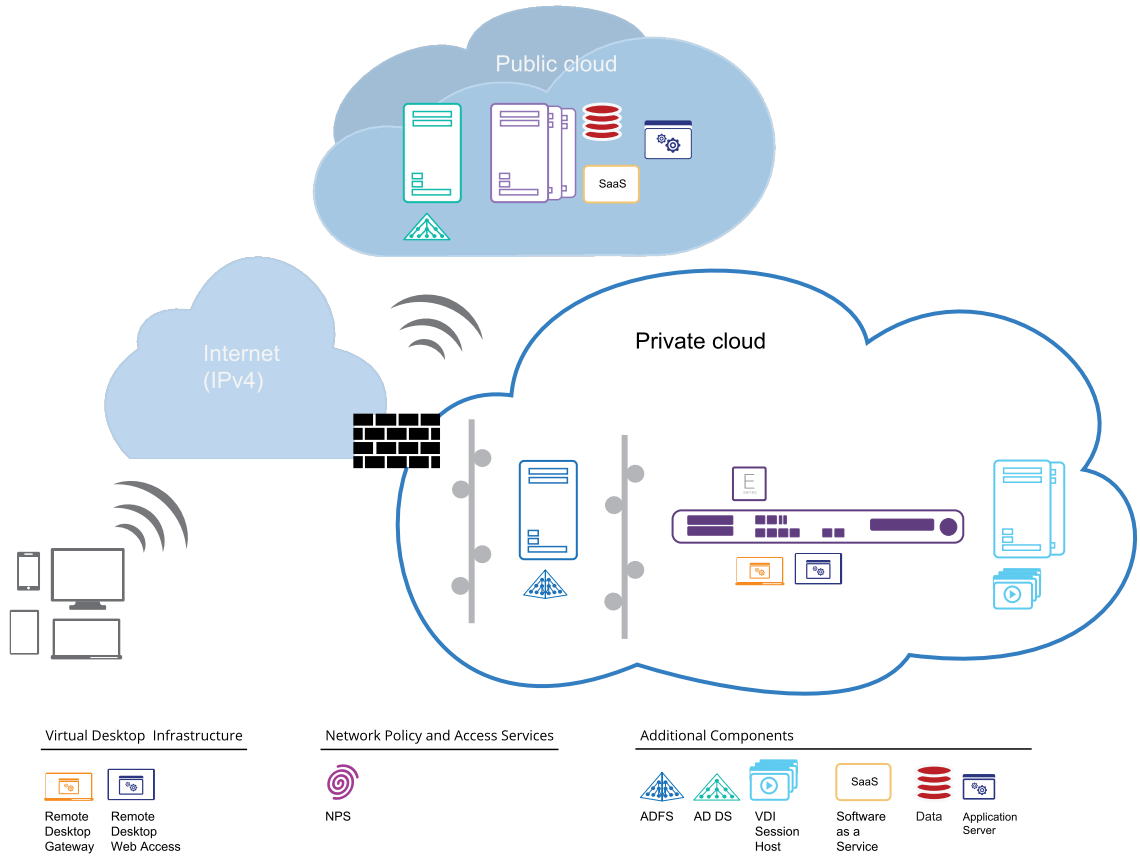


Illustration 4: VDI Role

General Setup Information

The following lists network components that most commonly require configuration to support feature deployments.

> Note: Some items are optional. Details for feature configuration are discussed in the topic Resource Worksheet.

Network Policy Server

- CelestixEdge virtual appliance serves as the RADIUS server; it must be domain joined
- Network Access Server (RADIUS Client)
- IP Address
- Shared secret
- Network policies
- Authentication protocol options

Remote Access

- **DirectAccess**
  - An Active Directory® Domain Services (AD DS) domain
  - At least one domain-joined DirectAccess server (E Series)
  - A public key infrastructure (PKI) [recommended]
  - Network location server (optional)
  - DirectAccess clients running Windows 7 Enterprise or Ultimate, or Windows 8.x Enterprise
- **VPN**
  - SSL certificate (if using SSTP)
  - External firewall exceptions for configured ports
- **Web Application Proxy**
  - CelestixEdge virtual appliance serves as the reverse proxy
  - AD FS installed on separate Windows 2012 R2 server
  - SSL certificate
  - Firewall rules for traffic between Web Application Proxy server (VE Series) and AD FS server

Virtual Desktop Infrastructure (VDI) Components

- **Remote Desktop Gateway**
  - CelestixEdge virtual appliance must be domain joined
  - RD Connection Broker and RD Web Access Server
  - RD Session Host server
  - RD Gateway server
  - SSL certificate
  - AD DS Group Managed Service Account
  - Firewall exceptions maybe required
  - End Users: RDP client that supports RD Gateway (like Windows Remote Desktop Client)
- **Remote Desktop Web Access**
  - CelestixEdge virtual appliance must be domain joined
  - Remote Desktop Connection Broker
  - RD Session Host server with RemoteApp programs configured
  - SSL certificate
  - Firewall exceptions will be required for the WMI Service
  - Option – virtual desktop: Remote Desktop Virtualization Host server

Work Folders

- CelestixEdge virtual appliance serves as the sync server; it must be domain joined
- Domain-joined Windows Server 2012 R2 as the sync share; share volume formatted as NTFS

- Sync share DNS entry (recommended)
- SSL certificate
- User group (recommended)
- End users: Windows 8.1/RT 8.1

Version Information

Version information for virtual appliance components are noted on the main web UI page. Click the E Series logo link from any page to access:

The Next Step

The following sections cover general setup, which includes virtual appliance installation and configuration, then feature installation.

Install the Application

The guide provides a system administrator with concise instructions for a base deployment. The document covers common installation requirements and is not intended to be comprehensive. Every network environment is different, and some installations may require additional configuration.

Installation instructions first cover assumptions the guide takes into account for a common deployment to help administrators plan for the skills and resources they may need. Assumptions are followed by the Resource Worksheet. The worksheet helps to gather necessary information that will aid in the installation process. Preparation steps are followed by instructions to rack, connect to the network, and power the appliance.

Installation Notes

The following topics cover resources to prepare for installing the appliance on the network.

Server Requirements

The VE Series server specification are covered below.

Table: VE 3400 Server Specifications	
Operating System	Windows Server® 2012 R2
CPU (Processor)	2.4 GHz or greater with 2 cores
RAM (Memory)	4 GB; 8 GB recommended
Network Card	1-2 virtual adapters (Depending on the design of DA)
Available Disk Space	50 GB or greater

Table: VE 6400Server Specifications	
Operating System	Windows Server® 2012 R2
CPU (Processor)	2.4 GHz or greater with 2 cores; 2.8 GHz recommended with 4 cores recommended
RAM (Memory)	8 GB; 16 GB recommended
Network Card	1-2 virtual adapters (Depending on the design of DA)
Available Disk Space	50 GB or greater

Table: VE 8400 Server Specifications	
Operating System	Windows Server® 2012 R2
CPU (Processor)	2.8 GHz or greater with 2 cores; 2.8 GHz recommended with 6-12 cores recommended
RAM (Memory)	8 GB; 32 GB recommended
Network Card	1-2 virtual adapters (Depending on the design of DA)
Available Disk Space	50 GB or greater

Assumptions

The following sections provide information about necessary skills and knowledge administrators should have and the assumptions that cover application installation for a majority of network environments.

Skills and Knowledge

System administrators should be familiar with:

- Networking technology
- Windows Server management
- Microsoft Active Directory®
- Microsoft Unified Remote Access
- Network Policy Server*
- Work Folders*
- Remote Desktop Web Access*

*As required for deployment.

Network Settings

The following general conditions apply to the instructions contained in this guide. If alternatives apply, they are noted. Again, every network is different and may require some adjustment to the general information presented herein.

- Active Directory is used for the domain controller.
- Static IP addresses are reserved for network adapters as needed.

Resource Worksheet

It will expedite the process to gather and verify resource information in the Resource Worksheet below before starting appliance installation and setup. An example of the worksheet is provided below with descriptions for the information it includes. A blank copy of the worksheet, which can be printed, is included in the Appendix.

> Note: Incorrect network configuration could compromise or impede the appliance.

Table: Worksheet Form Example

Property	Network Information (example)	Explanation
Computer name		Used in: *Configure the Appliance > Quick Setup Wizard* The server must be assigned a computer name. The computer name must be 15 alphanumeric characters or less.
Administrator password		The local administrator password is necessary to log in to the web UI.
Workgroup or domain name		Used in: *Configure the Appliance > Quick Setup Wizard* Required for server setup. Record the name of the Workgroup or Domain that will be joined during setup.
LAN information Private or internal network interface	IP address Subnet mask Default gateway Primary/secondary DNS server(s) Static routes: Network address Gateway address	Used in: *Configure the Appliance > Quick Setup Wizard* Required for virtual appliance setup. The LAN (private network interface) adapter of the appliance is the interface assigned to internal network traffic.
WAN information Public or external network interface	IP address Subnet mask Default gateway Primary/secondary DNS server(s) Static routes: Network address Gateway address	May be needed in: *Configure the Appliance > Quick Setup Wizard > Network Interfaces* The WAN (public network interface) adapter of the appliance is the interface assigned to external network traffic. This configures how the WAN, or public interface, connects to the Internet.
DMZ information Additional network interfaces	Include the IP address/subnet mask for each adapter to be used.	May be needed in: *Configure the Appliance > Quick Setup Wizard > Network Interfaces* The DMZ adapters are optional configuration. This information is only necessary to assign static IP addresses to these adapters.
Active Directory Domain Services (AD DS)	IP address Hostname User account/password	Used in: *Application Setup > Quick Setup Wizard*.
AD FS	AD DS FQDN Administrator account	Used in: *Configure Features > Web Application Proxy* ADFS is required for Web Application Proxy.

Network Policy Server	Network Access Server (RADIUS Client) IP Address Shared secret Network policy criteria Authentication protocol options	May be needed in post-configuration for NPS or Remote Desktop Gateway. Setting up RADIUS authentication requires designating the NPS clients that will forward access requests, the criteria that will service as the policy to grant access, and the protocols that will be used for authentication.
DirectAcces/VPN	DA server Static IP address(es) Public address for client connections GPOs (if using customized policies) NLS certificate (if using external server) Infrastructure server(s) DA client Public address Subnet mask Default gateway DNS VPN server Client IP address pool (if not using DHCP) RADIUS server information (if not using Windows authentication)	Used in: *Configure Features: Remote Access Setup Wizard*. The Remote Access/VPN wizard will require server information. The client information will be required to set up remote devices. Note: Infrastructure server information refers to resources not discoverable by Active Directory.
PKI (if applicable)	IP address	May be needed in post-configuration for DirectAccess. PKI is recommended but no longer required for DirectAccess deployment, with a few exceptions, like OTP authentication. Note: Root certificate required.
Web Application Proxy	AD FS FQDN SSL certificate	Used in: *Configure Features*: *Web Application Proxy Setup Wizard*. Note: Root certificate required.
SSO Portal	Firewall rules for HTTPS and SSH communication Application requirements: URL Certificate Hostname Port File format	The SSO portal is a WAP feature. Rules need to be created in the edge firewall to allow application communication. While each application type is different, the list of application requirements covers common information for publishing a variety of applications.
Syslog	SIEM: FQDN/IP Port Certificate	The Logging feature, sometimes referred to as syslog, is a security information and event management solution (SIEM) feature. Server information is needed if a SIEM server is deployed on the network. An SSL certificate is required for encrypted remote logging.
Remote Desktop Gateway	RD Gateway (join domain) IP address Hostname External FQDN AD DS IP address Subnet mask	Used in: *Configure Features > Feature Details > Remote Desktop Gateway (RD Gateway) > Required Configuration After Installation*.

	Default gateway DNS RD Session Host (domain joined) IP address Hostname RD Connection Broker (domain joined) IP address Hostname RD Web Access (domain joined) IP Address Hostname Firewall rules	
Remote Desktop Web Access	RD Web Access Server (domain joined) IP address Hostname AD DS IP address Subnet mask Default gateway DNS RD Session Host (domain joined) IP address Hostname RD Connection Broker (domain joined) IP address Hostname Remote Desktop Virtualization Host server (optional) IP address Hostname Firewall rules	Used in: *Configure Features > Feature Details > Remote Desktop Gateway (RD Gateway) > Required Configuration After Installation*.
Work Folders	Sync share name SSL certificate AD security group for user accounts Sync share DNS entry (recommended)	Used in: *Configure Features > Work Folders Setup Wizard*.
RADIUS server	IP address Hostname	May be needed to set up Remote Access with VPN or NPS.
RADIUS clients	IP address Hostname	May be needed to set up Remote Access with VPN or NPS.
DNS	AD FS FQDN Host/cluster IP	DNS must be updated to resolve the SSO portal FQDN to the WAP IP address.
Public domain registrar	Credentials	In SSO portal deployments, the portal FQDN should be added as a record to the public DNS host service for the federated domain.
SMTP server	IP address SMTP gateway name	May be needed in IG: *Configure the Appliance > Quick Setup Wizard* Optional configuration; SMTP is required for Alert Email.
Workplace Join	AD DS FQDN	This information would be used to extend functionality

	AD DS service account AD FS IP address AD FS FQDN DRS DNS entry	needed to set up BYOD access.
Application server	IP address Hostname	May be needed in post-configuration for: Web Application Proxy Remote Desktop Gateway RD Web Access
Bold items are required		

Install Instructions

Complete the following:

1. Log in to the server using an administrator account.
2. Navigate to the installation file: vCelestixEdge-2.1.00.exe
3. Right-click the file and select: **Run as administrator**.
4. Use the installation wizard to run through the setup process.
    - Accept the license agreement to proceed.
    - Select components prompt: leave the default options unless customization is necessary.
5. The wizard will inform when the process is complete.

The Next Step

Once the application is installed, next configure general network and appliance information.

Application Setup

After the application has been installed on a server, settings need to be configured. General setup uses a wizard to step through configuration in the web UI. Instructions cover the minimum functionality common to most deployments; however, an individual organization may need different or additional configuration. The section General Information provides necessary information about setup.

General Information

The following deployment notes provide information to understand feature configuration.

Domain Terminology Disambiguation

The following list explains how terms to describe components are used in documentation.

- On-premises domains are sometimes referred to as AD domains, but documentation uses the term *internal domain*.
- Off-premises domains are sometimes qualified by the terms external or public, but documentation uses the term *federated domain*.
- Servers configured with the role Active Directory Domain Services may be referred to as the domain controller (DC) or designated by the acronym AD DS. The acronym AD is used as a general referent for the internal domain directory.
- Unified Remote Access refers to the collection of technologies that Microsoft offers to allow external clients to access internal network resources. Documentation uses the short name Remote Access. The VE Series includes the Remote Access features Direct Access, VPN, and Web Application Proxy.
- The terms roles, services, and features are used to refer to Server 2012 R2 functionality for remote connectivity.
- Virtual Desktop Infrastructure (VDI) refers to the collection of technologies that Microsoft offers to allow organizations to publish cloud resources. The VE Series can be used for the VDI roles Remote Desktop Gateway (RD Gateway) and Remote Desktop Web Access (RD Web Access).
- Network Policy Server (NPS) is the Microsoft implementation of RADIUS authentication.

Deployment Assumptions

Information presented in the VE Series setup instructions is based on the following:

- The virtual serverhas not been joined to the domain yet.
- Active Directory (AD) is used as the domain controller.
- The local administrator account for the appliance is used for first login to the web UI.

Requirement Checklist

Items below will be required to set up the appliance. Plan ahead so that items are available when needed to complete configuration.

- Domain administrator credentials
- Necessary static IP addresses are reserved
- Windows 2008 R2 environments: WinRM 3.0 must be installed and running, and firewall rules must allow traffic on port 5985.

Example Information

To help make the instructions clear, the following examples are used to identify components.

	CelestixEdge Appliance
FQDN	`CelestixEdge01.example.com`
Host Name	`CelestixEdge01`
Domain Name	`example.com`

Access the Web User Interface

Accessing the web UI is necessary to continue setup. The IP address for the internal network (LAN0) adapter is used to access the web UI.

Web UI Login

From a client computer on the network, default access to the appliance web UI is through a web browser at https://ServerName|IP address:8098.

> For example, if the server LAN IP address is 192.168.30.4, the web UI URL would be https://192.168.30.4:8098

Enter local administrator credentials when prompted.

> Important: A certificate warning may display because the site uses a self-signed certificate. Accept the certificate to access the web UI.

Quick Setup Wizard

While working through the wizard to configure **General Settings**, the appliance may need to reboot.

1. **Administrator Password** – change the local administrator password if necessary. If not, enter the current password.
    - **User name** – the Administrator Password feature only changes the local administrator password, which must be the logged in account.
    - **Password** – enter and confirm a new password. Complexity requirements are noted on the screen.
2. **Date and Time** – use onscreen controls to enter the date, time, and time zone, then configure for daylight savings if necessary.
3. **Network Interfaces** – select the LAN network adapter to set a static address. A static address includes these settings:
    - **Internet Protocol (IP) address**
    - **Subnet mask**
    - **Gateway address**
    - **Automatic or preferred DNS server**
4. **Hostname and Domain**

    > Note: Fields will be autopopulated with available settings if the appliance was joined to the domain previously; the reboot will be skipped if they are left unchanged.

    - **Hostname** – specify a name for the appliance; it must be unique.

      For example: `CelestixEdge`
    - **Domain** – enter the name for the internal domain the appliance will join.

      For example: `example.com`.
    - **Username** – enter an account with domain administrator access to AD (domain\username).

      For example: `example\adminuser`
    - **Password** – provide the account password.
5. **Reboot**
    - Click **Next** to apply changes and reboot the appliance.

      > Note: Domain administrator credentials (example: `example\adminuser`) will be required to access the web UI after the reboot.
6. **Alerts Email** – optional; general appliance notifications can be sent to designated recipients through a connection to a network SMTP server.
    a. Select **Enable alert email**.
    b. Complete the following:
        - **Alert Message settings**
            - **To** – indicate one or multiple recipients. For multiple addresses, use a comma to separate addresses.
            - **From** – enter an address that recipients will recognize.

- ▪Select check boxes for the alert levels that will generate email.
  - **Send error alert email** – includes alert types where the level is set to Error.
  - **Send warning alert email** – includes alert types where the level is set to Warning.
  - **Send informational alert email** – includes types where the level is set to Information.
- **SMTP server settings**
  - **Name** – indicate the network SMTP server name or IP address.
  - **Port** – enter the number used for SMTP communication.
  - **Use SSL/TLS** – select to require encryption.
  - **SMTP settings** – select and provide credentials with permission to access the SMTP server.
  - **Send Test Message** – create a test email using the settings entered above.

    > Note: The alert email function will indicate whether a test email was sent. If the test email is not received after the alert email feature indicates that one was sent, the error is most likely due to SMTP server settings. An error will occur if the SMTP service is not running or if the virtual appliance is not correctly configured to see the SMTP server. Confirm the SMTP server and network settings before trying to test again.

c. Click **Save** to add configuration.

The wizard is complete when the congratulations screen displays.

The Next Step

This completes the initial setup. Now it's time to install features.

Configure Features: Installation

Now that the appliance is up and running, use the Features configuration tool to install roles and services necessary for the deployment. Instructions cover the functionality common to most deployments for a CelestixEdge VE Series Appliance; however, an individual organization may need different or additional configuration.

The following features are available:

- Network Policy Server – basic RADIUS authentication or RADIUS proxy; can also serve as a NAP policy server.
- Remote Access with VPN – configuration for DirectAccess with an option for VPN. DirectAccess provides always-on remote connectivity and management for Internet-connected Windows 7 and 8 computers. VPN provides access for nonmanaged devices.
- Web Application Proxy – external access by authenticated users to published applications.
- Remote Desktop Gateway – VDI component; firewall friendly external access to internal network remote desktop servers.
- Remote Desktop Web Access – VDI component; access to RemoteApp in Windows 7, or to Desktop Connection through a web browser. RD Web Access can also include remote access to internal computers through a browser.
- Work Folders – a server sync share that hosts work files for anywhere access from supported devices (BYOD functionality).

General Features Management

The instructions below explain how to use feature management tools.

Installation

Use the one-click installation function to install Remote Access or VDI roles.

To install a feature

1. Navigate to **CelestixEdge|Features**.
2. Click the toggle button to **On** for a feature.
3. Click **Apply** to confirm.
4. The feature's status indicator will rotate while the system processes the request.
5. A confirmation will display when the process is complete.
6. Click the restart system link if prompted.

See the topic Feature Details for more information about feature options.

Feature Management Tools

Once installed, some of the features include links that launch RDP applications to management consoles (MMCs). These links serve two purposes:

- Some features require additional configuration that can only be accomplished through the MMC.
- The links provide convenient access to advanced management functions.

Some features do not do not contain an RDP link, usually because no additional configuration is required.

To access management tools

1. Navigate to **CelestixEdge|Features**.
2. Click a feature name with a link in the list.

   A RemoteApp will download: confirm if necessary.
3. Launch the app.
4. Enter administrator credentials for the appliance when prompted.

   > Important: When the VE Series is joined to an AD domain, a valid domain administrator account is required for logon.

   > Notes:
   > - If prompted, allow the connection.
   > - If a self-signed certificate is used, accept the certificate when prompted.
   > - Once launched the app opens as a Remote Desktop Connection.
5. Use the MMC to configure settings as needed.
6. When done, navigate to **File|Exit** in the remote desktop window to close and return to the DirectAccess screen in the web UI. Closing the application logs off the RDP session to the appliance and is recommended to release management resources.

   > Note: If the File menu is not visible, use the quick close button (boxed x).

Feature Details

The *Need to Knows* section in the feature descriptions below cover important details about configuration. They are organized as follows:

- Installs – lists roles and features that will be installed.
- Affected Appliance Features – notes any conditions that may affect other features available on the appliance.

- Required Configuration After Installation – notes any configuration that will be necessary once the feature is installed.

Network Policy Server (NPS)

NPS provides basic RADIUS authentication, authorization, and accounting, or RADIUS proxy (connection request referral).

Need to Knows

The following summary information is provided for reference.

Installs

Role Service: Network Policy Server

Feature: RSAT - Network Policy and Access Service Tools

Affected Appliance Features

NPS is required for Remote Desktop Gateway (RD Gateway). If RD Gateway is deployed, the NPS role is installed automatically as part of that feature setup.

Required Configuration After Installation

Configuration must be customized for an environment. Use the **Network Policy Server** link to open an RDP session in the browser to access RADIUS server/client configuration.

Remote Access with VPN

Remote Access with VPN configures DirectAccess (DA) on the VE Series server. DirectAccess provides an automated, always-on secure connection for end user access to internal network resources in addition to manage-out functionality for remote domain-joined computers. Remote Access includes the option to enable a VPN that can be used for nonmanaged devices.

Need to Knows

The following summary information is provided for reference.

Installs

Role Service: DirectAccess and VPN (RAS)

Feature: RSAT – Remote Access Management Tools (GUI and Command-Line Tools, module for

Windows PowerShell)

Feature: Group Policy Management

Feature: RAS Connection Manager Administration Kit (CMAK)

Affected Appliance Features

Deployments with nonmanaged remote devices will require the VPN option to be enabled.

Cannot be colocated with Web Application Proxy

Required Configuration After Installation

Configuration must be customized for an environment; there are two options:

- Click the Wizard button to open the Remote Access configuration tool.
- Click the Remote Access with VPN link to open the Remote Access console as an RDP application.

Web Application Proxy

Web Application Proxy publishes access to internal web applications for external users. The VE Series adds a portal to make accessing applications more convenient. It also leverages authentication, authorization, and SSO functionality. It is configured for deployments where AD FS runs on a separate server.

> Notes:
>
> - Web Application Proxy cannot be colocated with the following roles:
>   - AD FS – Web Application Proxy requires AD FS, but cannot be installed on the same server.
>   - DirectAccess
> - The VE Series only supports forms based authentication.

Need to Knows

The following summary information is provided for reference.

Installs

Role Service: Web Application Proxy

Feature: RSAT – Remote Access Management Tools (GUI and Command-Line Tools, module for Windows PowerShell)

Affected Appliance Features

Web Application Proxy requires the Remote Access role to be installed.

Web Application Proxy is deployed when AD FS is intended to reside on a separate server from the E Series; information for that server will be used in Web Application Proxy configuration.

DirectAccess cannot be colocated.

Required Configuration After Installation

Configuration must be customized for an environment; there are two options:

- Click the Wizard button to open the Web Application Proxy configuration tool.
- Click the Web Application Proxy link to open the Remote Access console as an RDP application.

Remote Desktop Gateway (RD Gateway)

RD Gateway provides secure access to internal resources for remote users. Access is through the Remote Desktop Connect (RDC) client, and avoids the need for a VPN. User connections are encrypted and authorization policies set standards for client access.

> Important: RD Gateway requires NPS.

Need to Knows

Installs

Role Services: Network Policy Server, Remote Desktop Gateway, RPC over HTTP Proxy

Features: RSAT – Network Policy and Access Service Tools, Remote Desktop Services Tools/Remote Desktop Gateway Tools

Affected Appliance Features

RD Gateway requires NPS, which will be installed at the same time unless NPS is already installed, in which case the installation process proceeds just for RD Gateway.

Required Configuration After Installation

Configuration must be customized for an environment. Use the Remote Desktop Gateway link to open an RDP session to the Remote Desktop Gateway Manager Console in the browser.

> Note: Firewall rules may need to be adjusted to allow traffic.

Remote Desktop Web Access

RD Web Access (RD Web Access) provides streaming access to hosted applications. Windows 7 uses RemoteApp to start an RD Services session. Other devices can use a web browser to access them through Desktop Connection. RD Web Access also lets users access computers with Remote Desktop enabled through RD Web Connection.

Need to Knows

The following summary information is provided for reference.

Installs

Role Service: RD Web Access

Affected Appliance Features

None

Required Configuration After Installation

Firewall rules must be adjusted to allow WMI traffic.

Work Folders

Work Folders uses an internal file server to host work files for anywhere access from supported computers and devices. Data is synced across devices over an Internet connection. This supports a bring your own device (BYOD) program without sacrificing control over data. Once synced, files can be worked on from wherever and will be updated on the sync share when the device has Internet connectivity.

> Important: Work Folders is supported for use with Windows 8.1/8.1 RT devices.

Work Folders provides options to:

- Use a folder that already contains user data so Work Folders can be employed without migrating servers and data, or affecting existing share options (for example, Folder Redirection, Offline Files, and home folders).
- Add policies for encryption and lock-screen passwords.

Need to Knows

The following summary information is provided for reference.

Installs

Role Services: File Server, File Server Resource Manager, Work Folders

Feature: RSAT – File Server Resource Manager Tools

Affected Appliance Features

None

Required Configuration After Installation

Configuration must be customized for an environment:

1. Click the Wizard button to run the Work Folders configuration tool.
2. Next, use the Remote Desktop management console (**System|Remote Desktop**) to open an RDP session from the local computer to the VE Series virtual appliance.
    - In Windows Server, open the Server Manager.
    - Navigate to File and Storage Services|Work Folders.
    - Click the link to create a sync share to open the Windows configuration wizard.

The Next Step

Once Remote Access features are installed, the next step depends on the deployment. Some features require configuration; these instances are noted in the Feature Details described above.If all features have been configured, save a copy of the system image in the hypervisor to preserve initial configuration. Using the Windows backup feature is also recommended.

Configure Features: Remote Access Setup Wizard

The wizard provides the steps to configure DirectAccess and VPN settings for the CelestixEdge VE Series Appliance. It covers the minimum functionality common to most deployments; however, an individual organization may need different or additional configuration.

Remote Access setup requires configuration in the VE Series Appliance web UI. General Information provides necessary information about setup. The topic Additional Configuration Notes provides details about conditional configuration that applies to some deployments.

General Information

The following deployment notes provide information that qualifies setup processes to understand Remote Access configuration.

Remote Access Terminology Disambiguation

The terms below describe components that are used in documentation.

- Computer account security groups (security groups) can be created in AD to manage client access efficiently by using group policy objects (GPOs).

Deployment Assumptions

Information presented in the E Series setup instructions is based on the following:

- The Remote Access with VPN feature has been installed through the web UI.
- Deployment is a single server.
- Network planning for appliance placement is complete.
- Necessary certificates have been acquired for:
  - IPsec
  - IP-HTTPS
  - NLS
- Firewall rules have been configured to allow traffic if the DirectAccess server is on an IPv4 network:
  - Teredo
  - 6to4
  - IP-HTTPS

    - If the virtual appliance only has one configured network adapter, TCP port 62000 must be opened on the appliance.
- If using a security group to manage access for clients, the group has been created in AD prior to running the setup up wizard.
- If customized GPOs will manage settings for clients and servers, they have been created prior to running the setup wizard.
- AD will be used for DirectAccess authentication and authorization.
- DNS needs to resolve to either the public host name of the DirectAccess entry point, or the NAT device for the DirectAccess server.

Requirement Checklist

The following items will be required to set up Remote Access. Plan ahead so that items are available when needed to complete configuration.

- Domain controller – DirectAccess requires Windows Server 2003 or higher.
- IP address – one or two address have been reserved.
- Public address – usually an FQDN that clients will use to connect to the network.
- DirectAccess clients – must be Windows clients that are domain joined. Supported options:
    - 8 Enterprise and higher
    - 7 (Ultimate, Enterprise)
- SSL certificate – an IPsec root certificate is required for Windows 7 DirectAccess client connections, and is a best practice for Windows 8.
- Email account – an account will be required to receive diagnostic reports for client access trouble shooting.

Additional Configuration Notes

The notes below discuss options that may apply to some deployments. They exceed the scope of these instructions, but will be helpful to consider when planning deployment.

- DirectAccess
    - Network Location Server – the wizard will configure a default NLS on the virtual appliance if an external server is not designated.
    - Group Policy Objects – the wizard will create the two required GPOs with default settings unless customized group policies are available to assign.
    - Security group – an AD security group is required to apply customized group polices to client computers. All remote computers in the domain can use DirectAccess unless an AD client group is specified to restrict access.
    - RADIUS – configuration for an external RADIUS server can be included to add strong authentication methods like one-time passwords (OTPs).

- VPN
  - VPN deployments using static IP addresses for clients need a defined range; otherwise, DHCP should be used.
  - VPN deployments not using Windows authentication need settings for a RADIUS server.

Example Information

To help make the instructions clear, the following examples are used to identify components.

	Internal Domain	CelestixEdge Appliance	Public Domain
FQDN	ad01.intexample.com	CelestixEdge01.intexample.com	da.example.com
Host Name	ad01	CelestixEdge01	
Domain Name	intexample.com	intexample.com	

Setup Wizard

The setup wizard is a walk-through to configure components for Remote Access.

Access the screen through the web UI at **CelestixEdge|Features|Remote Access with VPN|Wizard**.

Wizard Instructions

While working through the wizard, the virtual appliance may need to reboot.

Component Selection

Select a Remote Access configuration option.

> Note: DirectAccess should be enabled for managed clients, while VPN should be enabled to support unmanaged clients.

Configure both services DirectAccess and VPN

Select to add access through both DirectAccess and a VPN.

1. **DirectAccess**
   a. **Basic** – define the virtual appliance location and the URL that clients will use to access resources.
      i. Select the type of network environment:
         - **Edge** – requires two network adapters; one to the public Internet and one to the internal network.

- **Behind an edge device (with two network adapters)** – one adapter connects to the perimeter network, and the other connects to the internal network.
- **Behind an edge device (with one network adapter)** – the adapter connects to the internal network.

ii. **Public address** – enter the address that external clients will use to connect to the network.

> Note: While using an IP address is supported, the FQDN is a best practice.

For example: `da.example.com`

b. **Advanced** – define client parameters and assign the appliance network adapter that DirectAccess service will use.
   i. Installation type – select the DirectAccess functionality to deploy:
      - **Full DirectAccess installation** – bidirectional tunnels for remote client access and management.
      - **Client management only** – configure tunnel for remote client management.
   ii. **Client Group** – designate an AD security group that will manage devices that connect through DirectAccess; leave blank to include all remote devices.
   iii. **Internal** – specify the internal network adapter in the drop menu.
c. **GPO and NLS**
   i. Group Policy Object (GPO) – leave fields blank to configure the default options, otherwise designate predefined AD policy groups that will manage settings for devices and servers.
      1. **Client GPO** – specify the name for the AD policy that will manage client access.
      2. **Server GPO** – specify the name for the AD policy that will manage access to the DirectAccess server.
   ii. Network Location Server – the NLS server will be installed on the appliance unless an external server is designated.
      1. **Certificate** – if an SSL certificate will be used, navigate to and select it.
         a. Click the **Import** button.
         b. Complete the following:
            i. **Certificate Import** – navigate to and select the certificate that will be used for authentication.
            ii. **Password** – enter the certificate passphrase.
            iii. Click the **Import** button.
         c. The imported certificate should display in the **Certificate** field. If not, use the drop menu to select it.
      2. **NLS URL** – if an external NLS server is deployed, enter the HTTPS URL.
d. **Client Settings**

i. **Connection Name** – create a name for the network connection that end users will recognize.
ii. **Support Email** – enter the email account that will receive diagnostic reports created by the DirectAccess Diagnostics tool.

> Note: This option allows local name resolution when the server name does not exist in intranet DNS or if the DNS servers are unreachable.

iii. **Allow local name resolution** – select to use the recommended level of DNS local name resolution.
iv. **Enable for mobile computers only** – allow only mobile computers in the specified security groups to connect through DirectAccess.

> Important: Remote Access will create a WMI filter that will only allow mobile computers to join DirectAccess security groups. This setting requires that the administrator account configured for Remote Access have create/modify privileges.

v. **Enable Windows 7 Client Support** – select for environments that require support for Windows 7 clients.
vi. **IPsec Root Certificate** – conditional; designate a certificate to validate authentication for client connections; required for Windows 7 users, and recommended for Windows 8. See the following:
- If GPOs are used to push security certificates to domain servers, use the Certificate drop menu to select the certificate issued from the domain root CA.
- If the certificate needs to be added manually, use the import feature:
    1. Click the **Import** button.
        a. **Certificate Import** – navigate to and select the certificate that will be used for authentication.
        b. **Password** – enter the certificate passphrase.
        c. Click the **Import** button.
    2. The imported certificate should display in the **Certificate** field. If not, use the drop menu to select it.

vii. **Intermediate CA** – select if the certificate was not imported from the domain root CA.
viii. Click **Next**.

2. **VPN**
    a. **Address Assignment**
        i. **Assign addresses automatically** – use DHCP to assign client addresses.
        ii. **Assign addresses from a static address pool** – enter a range of IP addresses that

RRAS will assign to clients when they connect to the network.

Enter the start and end IP addresses to define the range.

b. **Authentication**
    i. **Use Windows Authentication** – use AD to authenticate users.
    ii. **Use RADIUS Authentication** – configure VPN connections to use RADIUS authentication.
        1. **Radius Server** – designate the server name or IP address.
        2. **Shared Secret** – create a secret to authenticate communication between the virtual appliance and RADIUS server.
        3. **Confirm** – confirm the shared secret.
        4. **Timeout** – the default is usually sufficient, but the duration the virtual appliance will try to connect to the RADIUS server can be customized as necessary.
        5. **Score** – the default is usually sufficient, but customize the initial responsiveness score as necessary.
        6. **Port** – the default is UPD 1812 for authentication. Legacy RADIUS servers may use 1646.
        7. **Always use message authenticator** – select if the attribute **Request must contain the Message Authenticator attribute** has been configured on the RADIUS server.

3. **Finish** – review the settings; click **Next** to configure.

Configure DirectAccess services only

Select to add access through DirectAccess connections.

1. **DirectAccess**
    a. **Basic** – define the virtual appliance location and the URL that clients will use to access resources.
        i. Select the type of network environment:
            - **Edge** – requires two network adapters; one to the public Internet and one to the internal network.
            - **Behind an edge device (with two network adapters)** – one adapter connects to the perimeter network, and the other connects to the internal network.
            - **Behind an edge device (with one network adapter)** – the adapter connects to the internal network.
        ii. **Public address** – enter the address that external clients will use to connect to the network.

> Note: While using an IP address is supported, the FQDN is a best practice.

For example: `da.example.com`

b. **Advanced** – define client parameters and assign the appliance network adapter that DirectAccess service will use.
    i. Installation type – select the DirectAccess functionality to deploy:
        - **Full DirectAccess installation** – bidirectional tunnels for remote client access and management.
        - **Client management only** – configure tunnel for remote client management.
    ii. **Client Group** – designate an AD security group that will manage devices that connect through DirectAccess; leave blank to include all remote devices.
    iii. **Internal** – specify the internal network adapter in the drop menu.
c. **GPO and NLS**
    i. Group Policy Object (GPO) – leave fields blank to configure the default options, otherwise designate predefined AD policy groups that will manage settings for devices and servers.
        1. **Client GPO** – specify the name for the AD policy that will manage client access.
        2. **Server GPO** – specify the name for the AD policy that will manage access to the DirectAccess server.
    ii. Network Location Server – the NLS server will be installed on the virtual appliance unless an external server is designated.
        1. **Certificate** – if an SSL certificate will be used, navigate to and select it.
            a. Click the **Import** button.
            b. Complete the following:
                i. **Certificate Import** – navigate to and select the certificate that will be used for authentication.
                ii. **Password** – enter the certificate passphrase.
                iii. Click the **Import** button.
            c. The imported certificate should display in the **Certificate** field. If not, use the drop menu to select it.
        2. **NLS URL** – if an external NLS server is deployed, enter the HTTPS URL.
d. **Client Settings**
    i. **Connection Name** – create a name for the network connection that end users will recognize.
    ii. **Support Email** – enter the email account that will receive diagnostic reports created by the DirectAccess Diagnostics tool.

> Note: This option allows local name resolution when the server name does not exist in intranet DNS or if the DNS servers are unreachable.

iii. **Allow local name resolution** – select to use the recommended level of DNS local name resolution.

iv. **Enable for mobile computers only** – allow only mobile computers in the specified security groups to connect through DirectAccess.

> Important: Remote Access will create a WMI filter that will only allow mobile computers to join DirectAccess security groups. This setting requires that the administrator account configured for Remote Access have create/modify privileges.

v. **Enable Windows 7 Client Support** – select for environments that require support for Windows 7 clients.

vi. **IPsec Root Certificate** – conditional; designate a certificate to validate authentication for client connections; required for Windows 7 users, and recommended for Windows 8. See the following:

- If GPOs are used to push security certificates to domain servers, use the Certificate drop menu to select the certificate issued from the domain root CA.
- If the certificate needs to be added manually, use the import feature:
    1. Click the **Import** button.
        a. **Certificate Import** – navigate to and select the certificate that will be used for authentication.
        b. **Password** – enter the certificate passphrase.
        c. Click the **Import** button.
    2. The imported certificate should display in the **Certificate** field. If not, use the drop menu to select it.

vii. **Intermediate CA** – select if the certificate was not imported from the domain root CA.

viii. Click **Next**.

Configure VPN services only

Select to add access through a VPN connection.

> Note: VPN should be enabled to support unmanaged clients.

1. **VPN**
    a. **Address Assignment**
        i. **Assign addresses automatically** – use DHCP to assign client addresses.
        ii. **Assign addresses from a static address pool** – enter a range of IP addresses that RRAS will assign to clients when they connect to the network.

            Enter the start and end IP addresses to define the range.

b. **Authentication**
    i. **Use Windows Authentication** – use AD to authenticate users.
    ii. **Use RADIUS Authentication** – configure VPN connections to use RADIUS authentication.
        1. **Radius Server** – designate the server name or IP address.
        2. **Shared Secret** – create a secret to authenticate communication between the virtual appliance and RADIUS server.
        3. **Confirm** – confirm the shared secret.
        4. **Timeout** – the default is usually sufficient, but the duration the appliance will try to connect to the RADIUS server can be customized as necessary.
        5. **Score** – the default is usually sufficient, but the initial responsiveness score can be customized as necessary.
        6. **Port** – the default is UPD 1812 for authentication. Legacy RADIUS servers may use 1646.
        7. **Always use the same message authenticator** – select if the attribute **Request must contain the Message Authenticator attribute** has been configured on the RADIUS server.

The wizard is complete when the congratulations screen displays. Depending on the configuration to be completed, this may take some time.

The base level setup for Remote Access options is now complete. Clients can now be configured to access resources.

The Next Step

The next step depends on the deployment. If all features have been configured, save a copy of the system image in the hypervisor to preserve initial configuration. Using the Windows backup feature is also recommended.

Configure Features: Web Application Proxy Setup Wizard

The wizard provides the steps to configure Web Application Proxy (WAP) settings for the CelestixEdge VE Series Appliance. It covers the minimum functionality common to most deployments; however, an individual organization may need different or additional configuration.

Resources for Web Application Proxy setup are as follows:

- Required: VE Series virtual appliance web UI
- Conditional: SSO Portal deployment requires additional DNS records and firewall rules

General Information provides necessary information about setup.

General Information

The following deployment notes provide information to understand Web Application Proxy configuration.

Remote Access Terminology Disambiguation

The terms below describe components that are used in documentation.

- A federation service namespace is sometimes referred to as the AD FS or authentication namespace, but documentation generally uses the shortened term *federation namespace*. It is used as the Service Principle Name (Service Name) for AD FS. The federation namespace is based on the FQDN that represents the SSL certificate Subject (or Common Name).

Deployment Assumptions

Information presented in the A Series setup instructions is based on the following:

- The Web Application Proxy feature has been installed through the web UI.
- Deployment is a single proxy server.
- AD will be used for authentication and authorization through AD FS.
- Internal DNS entries have been configured for Web Application Proxy to resolve hostnames for backend servers.
- Public DNS entries have been configured to resolve external URLs for each published application.
- Firewall rules have been configured to allow traffic for the following connectivity:
    - To AD FS through port 443
    - To AD

- To published applications as required

Requirement Checklist

The following items will be required to set up the proxy. Plan ahead so that items are available when needed to complete configuration.

- AD FS – must be deployed on a separate server.
- AD FS administrator account – required to access AD FS for authentication.
- Publicly signed certificate – an SSL certificate is required; it is strongly recommended to use a third-party certificate from a trusted vendor. The certificate subject is the same as the federation service namespace.
- SSO portal address – if the portal is deployed, an FQDN will be needed to assign to the SSO portal for end user access to hosted applications.

Example Information

To help make the instructions clear, the following examples are used to identify components.

	Internal Domain	Federated Domain	CelestixEdge Appliance
FQDN	`ad01.intexample.com`	`adfs.fedexample.com`	`CelestixEdge01.intexample.com`
Host Name	`ad01`	`adfs`	`CelestixEdge01`
Domain Name	`intexample.com`	`fedexample.com`	`intexample.com`

Setup Wizard

The setup wizard is a walk-through to configure components for proxy services.

Access the screen through the web UI at **CelestixEdge|Features|Web Application Proxy|Wizard**.

Wizard Instructions

1. **ADFS Services**– complete the following:
    a. **ADFS Service** – enter the fully qualified domain name.
        Example: `adfs.fedexample.com`
    b. **Username** – enter AD FS administrator account.
        For example: `intexample\adminuser`
    c. **Password** – enter the password for the AD FS account.
    d. **SSO Portal** – if WAP will be used to publish applications for remote users, enter the

address end users will need to access those applications.

> Note: Entering the address creates the portal.

2. **Certificate**
    a. Click the **Import** button.
    b. Complete the following:
        i. **Certificate** – navigate to and select the certificate that will be used for authentication.
        ii. **Password** – enter the certificate passphrase.
        iii. Click the **Import** button.
    c. The imported certificate should display in the **Certificate** field. If not, use the drop menu to select it.
    d. Click **Next**.
3. **Finish** – review the settings; click Next to configure.
4. The wizard is complete when the congratulations screen displays.
5. SSO portal deployment: Click the PowerShell link to download a script that must be run on the AD FS server to set up a relying party trust.

The base level setup for Web Application Proxy is now complete.

The Next Step

The next step depends on the deployment. If all features have been configured, save a copy of the system image in the hypervisor to preserve initial configuration. Using the Windows backup feature is also recommended.

Configure Features: Work Folders Setup Wizard

The wizard provides the steps to configure Work Folders settings for the CelestixEdge VE Series Appliance. It covers the minimum functionality common to most deployments; however, an individual organization may need different or additional configuration.

Work Folders setup requires configuration in the following places:

- The domain controller
- The VE Series appliance web UI
- Windows Server Manager

The information below covers each of these components: complete the tasks in the order presented to deploy the feature efficiently. General Information provides necessary information about setup.

General Information

The following deployment notes provide information to understand Work Folders configuration.

Terminology Disambiguation

The terms below describe components that are used in documentation.

- A Sync share is a collection of user folders that use the same policy settings.
- A Sync server has the Work Folders role installed. It can contain multiple sync shares.

Deployment Assumptions

Information presented in the E Series setup instructions is based on the following:

- The Work Folders feature has been installed through the web UI.
- Deployment is a single sync server with a single sync share.
- The user security group is created prior to setting up the sync share.
- If DNS is configured for Work Folders access, it is completed before using the setup wizard.

Requirement Checklist

The following items will be required to set up the Work Folders service. Plan ahead so that items are available when needed to complete configuration.

- Domain controller – Windows Server 2012 or higher.
- Publicly signed certificate – an SSL certificate is required for Work Folders; it must be a third-party certificate from a trusted vendor. Additional requirements:
    - The certificate subject needs to be the same as the Work Folders public URL (format: `workfolders.<domain_name>`)
    - Certificate subject alternative names (SANs) must list the server name for each sync server in use.

    > Note: A certificate is required for each server hosting the Work Folders feature.
- AD security group – a user group to control access to the sync share.
- Clients – supported options:
    - Windows 8.1, 8.1 R, 7 (Professional, Ultimate, Enterprise)
    - iPad with iOS 8.1 or later

Additional Configuration Notes

The notes below discuss options that can extended Work Folders functionality. They exceed the scope of these instructions, but will be helpful to consider when planning deployment.

- DNS configuration is required for the following instances:
    - To sync files over the Internet, a public domain name with a DNS Host (A) record is required to allow clients to resolve the Work Folders URL.
    - To sync files on an intranet, a DNS alias record is required on the internal network for the Work Folders URL that resolves to the server names of all sync servers on the network.
- AD FS facilitates the following services:
    - Device Registration Service for Workplace Join
    - RADIUS and multifactor authentication.
- Web Application Proxy allows clients to sync files over the Internet.

Initial Configuration

Before setting up federation components, there are some tasks that need to be completed.

AD Security Group Configuration

Set up security groups in AD to manage Work Folder access. Configuration is described briefly and requires familiarity with AD domain administration.

User Group

1. Create a dedicated Work Folders user group with these settings:
   - Scope: Global
   - Type: Security
2. Add user accounts to the group.

Setup Wizard

The setup wizard is a walk-through to assign a certificate to encrypt remote access to work files.

Access the screen through the web UI at **CelestixEdge|Features|Work Folders|Wizard**.

Wizard Instructions

Use the following instructions to import the SSL certificate for Work Folders.

1. **Certificate** – import a certificate to encrypt authentication:
   a. Click the **Import** button.
   b. Complete the following:
      i. **Certificate Import** – navigate to and select the Work Folders certificate that will be used for authentication.
      ii. **Password** – enter the certificate passphrase.
      iii. Click the **Import** button.
   c. The imported certificate should display in the **Certificate** field. If not, use the drop menu to select it.
   d. Click **Next**.
2. **Finish** – review the settings; click **Next** to configure.

The wizard is complete when the congratulations screen displays. Next, a sync share directory must designated on the virtual appliance.

Required Configuration After Setup Wizard

Configuration must be customized for an environment:

1. Open an RDP session from the local computer to the VE Series virtual appliance, using Remote Access Console (**CelestixEdge|System|Remote Desktop**).
   a. In Windows Server, open the Server Manager.
   b. Navigate to **File and Storage Services|Work Folders**.
   c. Click the link to create a sync share to open the Windows configuration wizard.
2. When done, navigate to **File|Exit** in the remote desktop window to close and return to the

Maintenance screen. Closing the application logs off the RDP session to the virtual appliance and is recommended to release management resources.

> Note: If the File menu is not visible, use the quick close button.

The base level setup that allows external access to work files is now complete. Supported clients can now be configured to access sync services.

The Next Step

The next step depends on the deployment. If all features have been configured, save a copy of the system image in the hypervisor to preserve initial configuration. Using the Windows backup feature is also recommended.

Create a Backup

Once configuration is complete, creating a backup will provide another option to help remediate issues that may result from future system updates or changes. Celestix recommends running the Windows backup utility (**System**|**Backup**).

Now that the configuration steps, system image creation and backup are complete, check for software updates.

Update Software

The Software Update Service allows administrators to keep system software current through hotfixes, service packs, and upgrades. They are necessary for the security and proper functioning of the virtual appliance.

Access the update service through the web UI (**System**|**Software Updates**).

To find updates

1. Navigate to **System**|**Software Updates**|**Appliance Updates**.
2. Complete the following:
    a.  – click the *Check for Updates* button.
    b. Select an item.
    c. **Install** – install selected update.
3. Confirm if prompted.

Once applicable updates are installed, Celestix recommends checking for Windows updates (**System**|**Windows Updates**).

Thank you for choosing the CelestixEdge VE Series Appliance for your remote connectivity solution. This completes the setup and configuration steps for base-level deployment.

Email questions to support@celestix.com

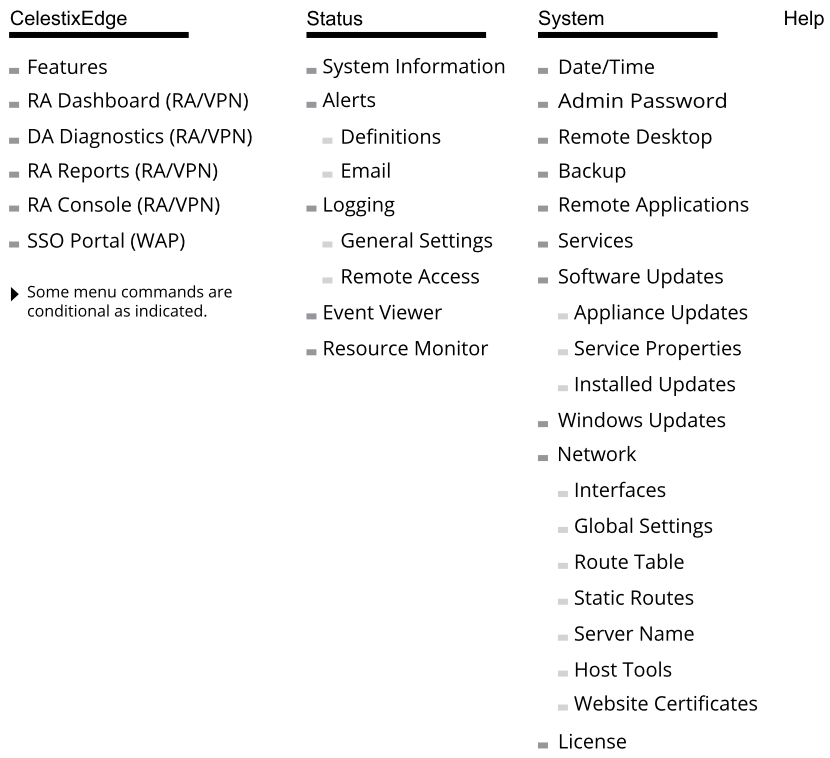
Appendix

Use the links to jump to a topic:

Web User Interface Content Overview

The menu structure for the web UI is outlined below. Use it to quickly find features.

Diagram: VE Series Web User Interface Menu



Glossary

A

Active Directory
Microsoft's directory service for Windows domains.

Active Directory Federation Services
The Microsoft implementation of single sign-on (SSO).

AD
Acronym for Active Directory

ADFS
Acronym for Active Directory Federation Services

C

CA
Acronym for certificate authority

Certificate
The tool that TLS/SSL uses to encrypt communication.

Certificate authority
An entity that issues certificates to encrypt digital communication.

Certificate revocation list
A list of certificates that are no longer valid for encryption.

CRL
Acronym for certificate revocation list

D

DA
Acronym for DirectAccess

Device Registration Service

A feature of ADFS that facilitates Workplace Join, which allows users to register unmanaged devices to be known entities to the domain.

DirectAccess

A secure Remote Access connection that provides remote access to the internal network and manage-out capabilities.

Directory synchronization

A Microsoft tool that synchronizes users, groups, and attributes (like distribution groups or user phone numbers) to an Office365 instance.

DirSync

Abbreviation for Directory Synchronization

DNS

Acronym for Domain Name System

Domain Name System

A service that translates domain names into IP addresses.

DRS

Acronym for Device Registration Service

F

Failover

A part of high availability where switching from failed to redundant components occurs, usually automatically.

Federation

Federation refers to the mechanism that creates trust relationships for identity management. These trust relationships then allow single sign-on for multiple independent systems.

H

HA

Acronym for high availability

High availability

A system implementation that minimizes downtime, meaning unavailability to users.

I

Identity provider

An entity that authenticates a user to a service provider.

M

Multifactor authentication

Employs additional forms of user data for authentication. Two-factor authentication using one-time passwords is a common example.

N

namespace

A unique identifier for the authentication environment.

Network access server

A component of RADIUS authentication. Abbreviated NAS.

Network Policy Server

How Microsoft implements RADIUS.

NPS

Acronym for NPS

O

Office 365

The cloud implementation of the Microsoft Office productivity suite.

P

Password Sync

A component of the Microsoft Directory Synchronization tool that coordinates password hashes between internal Active Directory and Office365.

portal page

The portal page consolidates external access to published applications.

R

RADIUS

Remote Access Dial In User Service (RADIUS) is an authentication protocol (RFC 2865). The HOTPin system uses the Microsoft application Network Policy Server (NPS) to implement RADIUS.

RADIUS client

A RADIUS client is a network access server (NAS) that facilitates authentication requests between access clients and the HOTPin system when RADIUS is used as the authentication protocol.

Redundancy

A part of high availability design that employs additional resources, like extra servers, to carry out required functionality in the event one component fails.

Relying party trust

Designates a service provider as a partner organization for ADFS. The service provider is a relying party that ADFS will trust authentication requests from.

Remote Access Dial In User Service

See RADIUS.

S

Service provider

An entity that trusts an identity provider for user authentication in a federated system.

Single sign-on

Allows login to multiple system using one set of credentials. In ADFS, once users log in with their organization AD credentials, they can access federated resources without being prompted further for authentication.

SSO

Acronym for single sign-on

U

UAG trunk

A repository of published applications for user access; this term only applies to Celestix WSA environments or other UAG deployments.

V

Virtual Private Network

A secure Remote Access connection that provides access remote access to the internal network.

VPN

Acronym for virtual private network

W

WAP

Acronym for Web Application Proxy

Web Application Proxy

A reverse proxy solution that publishes internal web applications for external access.

WID

Acronym for Windows Internal Database

Windows Internal Database

A version of SQL Server Express that is automatically included with Windows Server. It is the default data store option for ADFS.

Workplace Join

The function that allows users to register devices with the domain through DRS; devices can then access application resources based on trust.

Index

Resource Worksheet

Table: Worksheet Form Example

Property	Detail	Your Information
Computer name		
Administrator password		
Workgroup or domain name		
LAN information Private or internal network interface	IP address Subnet mask Default gateway Primary/secondary DNS server(s) Static routes: Network address Gateway address	
WAN information Public or external network interface	IP address Subnet mask Default gateway Primary/secondary DNS server(s) Static routes: Network address Gateway address	
DMZ information Additional network interfaces	Include the IP address/subnet mask for each adapter to be used.	
Active Directory Domain Services (AD DS)	IP address Hostname User account/password	
AD FS	AD DS FQDN Administrator account	
Network Policy Server	Network Access Server (RADIUS Client) IP Address Shared secret Network policy criteria Authentication protocol options	
DirectAcces/VPN	DA server Static IP address(es) Public address for client connections GPOs (if using customized policies) NLS certificate (if using external server) Infrastructure server(s) DA client Public address Subnet mask	

	Default gateway DNS VPN server Client IP address pool (if not using DHCP) RADIUS server information (if not using Windows authentication)	
PKI (if applicable)	IP address	
Web Application Proxy	ADFS FQDN SSL certificate	
SSO Portal	Firewall rules for HTTPS and SSH communication Application requirements: URL Certificate Hostname Port File format	
Syslog	SIEM: FQDN/IP Port Certificate	
Remote Desktop Gateway	RD Gateway (join domain) IP address Hostname External FQDN AD DS IP address Subnet mask Default gateway DNS RD Session Host (domain joined) IP address Hostname RD Connection Broker (domain joined) IP address Hostname RD Web Access (domain joined) IP Address Hostname Firewall rules	
Remote Desktop Web Access	RD Web Access Server (domain joined) IP address Hostname AD DS IP address Subnet mask Default gateway DNS RD Session Host (domain joined)	

	IP address Hostname RD Connection Broker (domain joined) IP address Hostname Remote Desktop Virtualization Host server (optional) IP address Hostname Firewall rules	
Work Folders	Sync share name SSL certificate AD security group for user accounts Sync share DNS entry (recommended)	
RADIUS server	IP address Hostname	
RADIUS clients	IP address Hostname	
DNS	AD FS FQDN Host/cluster IP	
Public domain registrar	Credentials	
SMTP server	IP address SMTP gateway name	
Workplace Join	AD DS FQDN AD DS service account AD FS IP address AD FS FQDN DRS DNS entry	
Application server	IP address Hostname	
Bold items are required		