

ADSS Web RA Server 2.9.6

Installation

Guide

ASCERTIA LTD

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1 Introduction

Registration Authority (RA) is another important component of PKI along with Certificate Authority (CA). CA is primarily responsible to create and revoke certificates, but complex business scenarios demand more than just the creation of certificates. Their responsibilities now include but not limited to managing users, certificate creation requests and revocation of certificates.

Businesses in the modern world require strong control over these processes along with the complete audit trail, to maintain the irrefutable evidence of these activities for future. Such additional controls and management are covered by an RA. An RA is therefore responsible to verify a user and their certificate request, and then inform the CA to issue the requested certificate.

An RA receives a request for digital certificate and verifies the user requesting the certificate. The user verification can be done manually through face to face interaction or electronically by using other mediums like phone, video conferencing, mail or courier that is acceptable to the RA as a secured medium. Once RA approves the user, it informs the CA to issue the certificate for the user. The RA then obtains the user certificate from the CA, and sends it to the user using a secure medium.

1.1 Scope

This manual describes how to install ADSS Web RA Server.

ADSS Web RA comprises five components and the installation procedure for all are covered herein:

- Web interface that provides user services on desktop browsers.
- Admin console that provides system administration and configuration.
- API that utilises the ASP.NET Web API framework to provide a REST architecture.
- **Device** is used to manage device enrolment for certificate creation.
- Windows Enrolment is used to manage certificate renewal or auto-enrolment on a Windows machine.

1.2 Intended Readership

This manual is intended for administrators responsible for installation and initial configuration. It is assumed that the reader has a good understanding of web applications running on IIS, digital signatures, digital certificates and IT security.

1.3 Technical Support

If technical support is required, Ascertia has a dedicated support team providing debugging and integration assistance as well as general customer support. Ascertia Support can be accessed through <u>Ascertia Ticketing System</u> or email address: <u>support@ascertia.com</u>

Ascertia provides formal support agreements with all product sales. Contact <u>sales@ascertia.com</u> for further details.

A Product Support Questionnaire should be completed in order to provide Ascertia Support having information about your system environment, along with details of any issues encountered. When requesting help, it is always important to confirm these details:

- System platform.
- ADSS Web RA version number.
- Details of the specific issue and relevant steps taken to reproduce it if possible.
- Database vendor, version and patch level.
- Product log files.



1.4 Glossary

ADSS Web RA	A short form of Unified Web Registration Authority
Cert	A short form of Digital Certificate
DBMS	Database Management System
HSM	Hardware Security Module
HTTP	Hyper Text Transfer Protocol
HTTP/S	HTTP over SSL/TLS connection
SSL	Secure Sockets Layer



2 System Requirements

System Requirements includes hardware and software requirements both.

2.1 Hardware Prerequisites

Components	Requirements
Hard Disk Space	• 200 GB (Mínimum)
Memory	16 GB (Mínimum)
	• 24 GB (If the number of concurrent users is higher)
	32 GB (If the database is also deployed on the same system as
	the ADSS Web RA)
Processor	A modern multi-core CPU such as Xeon E3-XXXX or E5-XXXX series is recommended
Processor Type	• x64
HSM (Optional)	Thales Luna Network, PCIe, and USB
	• Entrust nShield Solo XC, Connect XC, and nShield EDGE
	Utimaco CryptoServer SE Gen2
	Microsoft Azure Key Vault
	Amazon Cloud HSM

2.2 Software Prerequisites

Component	Requirements		
Operating Systems	Follow this link to view details about supported OS: <u>https://manuals.ascertia.com/WebRA/ADSS-WebRA-Server-</u> <u>Platform-Support.pdf</u>		
Microsoft IIS	IIS 10Application Development feature in IIS		
IIS Rewrite Module	• v2.1		
.Net Framework	.Net Framework 4.8.1 or above		
.Net Core Runtime & Hosting Bundle	ASP.NET Core Runtime 9.0 or above		

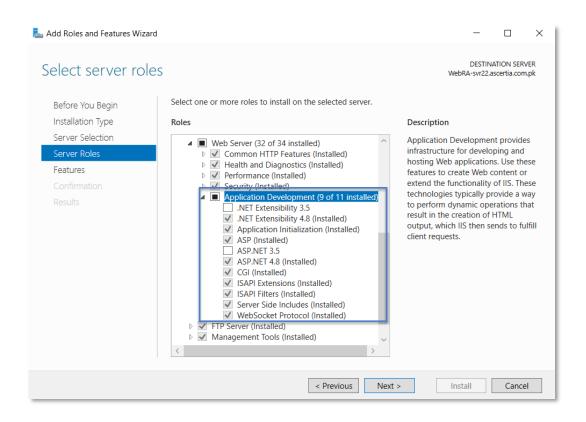
Database Server Web Brower (for end-users and administrators)	 Follow this link to view details about Database Server: https://manuals.ascertia.com/WebRA/ADSS-WebRA-Server-Platform-Support.pdf Follow this link to view details about Web Browsers: https://manuals.ascertia.com/WebRA/ADSS-WebRA-Server-Platform-Support.pdf
ADSS Server	ADSS Web RA uses ADSS Server under the hood to create and manage certificates for the end user as a CA. ADSS Server can be installed on a separate machine or on the same machine for testing and proof of concept. It is recommended to keep the ADSS installation on a separate machine for a production environment. For further requirements related to the installation of ADSS Server, please refer to the installation guide of ADSS Server. • ADSS Server 6.6 or above
DMZ Proxy Systems	 A DMZ proxy server is recommended to provide enhanced security for ADSS Web RA. Supported web servers are: Windows Server + IIS, Apache or IBM HTTP Server Linux + Apache or IBM HTTP Server It is recommended to use a reasonable CPU, 4 GB RAM (Minimum), 2000 MB Disk Space for the web server machine. ADSS Web RA and ADSS Server support network proxies to allow authenticated access to external services. Certificate generation with local smartcards or USB tokens requires ADSS Server Go>Sign Service.

For testing and proof of concepts, ADSS Server and ADSS Web RA can be installed on the same machine along with the database server. However, for optimal performance in a production environment, it is always recommended to install them on separately dedicated machines.

The details given above are the minimum set of requirements; for higher concurrent use of the application the system requirements may vary based on the load and performance expectations.

2.3 Application Development feature in IIS

Enable the following features in IIS on the deployment machine:





2.4 Microsoft .Net Core 9.0.0. Runtime & Hosting Bundle

2.4.1 Download the latest version of Microsoft .Net Core i.e. Microsoft .Net Core 9.0.0. Runtime and Hosting Bundle from the following link:

Microsoft .Net Core 9.0. Runtime & Hosting Bundle

2.4.2 Download the Hosting Bundle installer.

<u>∧ 9</u> .	0.0 Security patch 🕥						
Release not	es Latest release date December	3, 2024					
Build app	s - SDK 🕠		Run apps	- Runtime 💿			
SDK 9.0.101				ASP.NET Core Runtime 9.0.0			
OS	Installers	Binaries	The ASP.NET Core Runtime enables you to run existing web/server applications. On Windows, we recommend installing the Hosting Bundle, which includes the .NET Runtime and IIS support. IIS runtime support (ASP.NET Core Module v2) 19.0.24303.0				
Linux	Package manager instructions	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine					
macOS	<u>Arm64 x64</u>	<u>Arm64 x64</u>					
Windows	x64 x86 Arm64 winget instructions	<u>x64 x86 Arm64</u>	OS	Installers	Binaries		
All	dotnet-install scripts		Linux Package manager instructions Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine				
	dio support		macOS		<u>Arm64 x64</u>		
Visual Studio 2022 (v17.12) Included in Visual Studio 17.12.3 Visual Studio 17.12.3							
			The .NET D	Desktop Runtime resktop Runtime enables you to cludes the .NET Runtime; you	run existing Windows desktop		
Language C# 13.0	support		os	Installers		Binaries	
F# 9.0			Windows	Windows x64 x86 Arm64 winget instructions			
SDK 9.0.100				Runtime 9.0.0	nents needed to run a console		
SDK 9						app. Typically	
SDK 9 os	Installers	Binaries		install either the ASP.NET Core F		11 21 21	
	Installers Package manager instructions	Binaries Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine			Runtime or .NET Desktop Runtir Binaries	ne.	
OS		Arm32 Arm32 Alpine Arm64	you'd also	install either the ASP.NET Core I	Runtime or .NET Desktop Runtir Binaries Arm32 Arm32 Alpine Arm6	iii ji ji iii ji iii ji	
os Linux macOS	Package manager instructions Arm64 x64 x64 x86 Arm64	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine	you'd also	install either the ASP.NET Core I	Runtime or .NET Desktop Runtir Binaries	iii ji ji iii ji iii ji	
OS Linux macOS	Package manager instructions Arm64 x64	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine Arm64 x64	you'd also os Linux macOS	install either the ASP.NET Core I Installers Package manager instructions	Runtime or .NET Desktop Runtir Binaries Arm32 Arm32 Alpine Arm6 Arm64 Alpine x64 x64 Alpine	iii ji ji iii ji iii ji	

2.4.1. Once downloaded, execute the installer by executing dotnet-hosting-9.0.0-win.exe

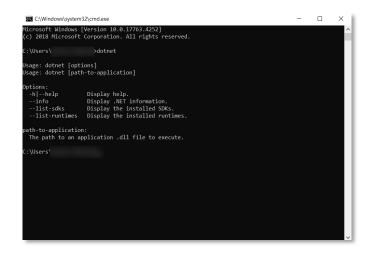




2.4.2. The setup will begin and take a few minutes to complete.

₩ Microsoft .NET 9.0.0 - Windows Server Hosting Setup —		\times
.NET Microsoft .NET 9.0.0 Windows Server Hosting		
Setup Progress		
Processing: Microsoft .NET Runtime - 9.0.0 (x86)		
	Cance	el
谢 Microsoft .NET 9.0.0 - Windows Server Hosting Setup —		×
Microsoft .NET 9.0.0 - Windows Server Hosting Setup – .NET Microsoft .NET 9.0.0 Windows Server Hosting		×
.NET Microsoft .NET 9.0.0 Windows Server Hosting		×
		×
.NET Microsoft .NET 9.0.0 Windows Server Hosting		×
.NET Microsoft .NET 9.0.0 Windows Server Hosting		×
.NET Microsoft .NET 9.0.0 Windows Server Hosting		×
.NET Microsoft .NET 9.0.0 Windows Server Hosting		×

- **2.4.3.** Once the installation process is complete, click **Close**.
- **2.4.4.** To test if the installation was correct and components are reachable, run command line and type the following command:





2.4.5. Now, restart your machine to apply these changes effectively.

2.5 Microsoft IIS URL Rewrite Module 2.1

2.5.1. Download Microsoft IIS URL rewrite module 2.1 from the following link:

Microsoft IIS URL Rewrite Module 2.1

2.5.2. Navigating to this URL will present with the following screen:



2.5.3. Scroll down to find a list of links available for download.

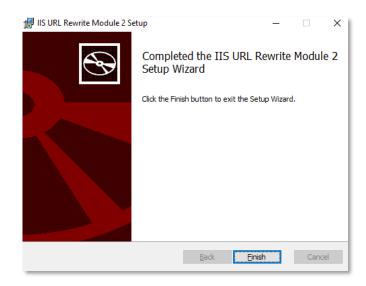
Download URL Rewrite Module	2.1
English: x86 installer / x64 installer	
German: x86 installer / x64 installer	
Spanish: x86 installer / x64 installer	
French: x86 installer / x64 installer	
Italian: x86 installer / x64 installer	
Japanese: x86 installer / x64 installer	
Korean: x86 installer / x64 installer	
Russian: x86 installer / x64 installer	
Chinese Simplified: x86 installer / x64 in	ıstaller
Chinese Traditional: x86 installer / x64 i	nstaller

2.5.4. Download **x64 installer** with your preferred language. For this documentation it's **English**. Start the installation by executing the downloaded file in administrator mode.





2.5.5. Accept the terms in the license agreement and click **Install** to proceed, the installation will take few minutes:

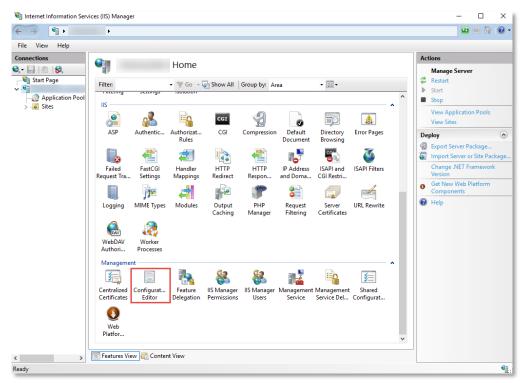


2.5.6. Click **Finish** once the installation process is complete.



2.6 Unlock system.webServer/serverRuntime section in IIS

- 2.6.1. Launch the IIS Manager
- 2.6.2. Select Server from left panel
- **2.6.3.** Open **Configuration Editor** from right pane under the Management section.



2.6.4. Unlock system.webServer/serverRuntime section in the Configuration Editor.

	•		🔤 🖂 🙆			
File View Help						
Connections Configuration Editor		Actions				
		E Apply				
📲 Start Page	Section: system.webServer/serverRuntim	e 👻	Cancel			
1			Generate Script			
Application Pools	 Deepest Path: MACHINE/WEBROOT alternateHostName 	T/APPHOST	Configuration			
> - 🗃 Sites	appConcurrentRequestLimit	5000	Search Configuration			
	authenticatedUserOverride	UseAuthenticatedUser				
	enabled	True	Section			
	enableNagling	False	Unlock Section			
	frequentHitThreshold	2	Help			
	frequentHitTimePeriod	00:00:10				
	maxRequestEntityAllowed	4294967295				
		49152				

The installation process for prerequisites is complete.



2.7 SMTP Server

ADSS Web RA uses email as the primary notification medium. User registration, and all notifications are sent via SMTP. Hence, it is a critical part of the architecture and deployment. Details required are:

- Hostname/IP address of SMTP server
- Listening Port of SMTP server
- TLS/SSL authentication to communicate with SMTP server (if required)
- Username and password to authenticate to SMTP server (if required)
- Email from Address for notifications sent from ADSS Web RA
- Email to Address for alerts and warnings sent by ADSS Web RA
- Email Subject for alerts and warnings sent by ADSS Web RA



If there is no alternative it is possible to still use ADSS Web RA. However, this involves copying the notification emails directly from the database and manually running the links therein. This usage is strongly discouraged in favour of a standard deployment though.

2.8 Database

ADSS Web RA Server requires its own database. It is not required to create the schema or configure any other feature prior to the installation.

Permissions are required to allow the creation of database tables, and entry, modification, and removal of data within those tables.



3 Installation Modules

ADSS Web RA consists of the following modules. Note the API is the only non-mandatory ones for a working solution:

ADSS Web RA Admin

Administration application that allows to manage the system wide configurations, service plans, user accounts and access controls, etc.

ADSS Web RA Desktop Web

ADSS Web RA Web is used for managing certificates i.e. creation, renewal and revocation.

ADSS Web RA API (Restful Web Services)

REST architecture API support that is used to integrate ADSS Web RA functionality within your own portal. The API uses JWT to implement authentication and authorization. There is a separate API Guide that provides full details of the REST architecture implementation.

• ADSS Web RA Device

ADSS Web RA Device is used to manage device enrolment for certificate creation, renewal and revocation.

ADSS Web RA SSL Device

ADSS Web RA SSL Device is used to manage device enrolment over SSL for certificate creation, renewal and revocation e.g. EST Protocol

Windows Enrolment

ADSS Web RA Windows Enrolment is used to manage certificate renewal or auto-enrolment on a Windows machine.



4 ADSS Web RA Installation on Windows Server

4.1 Fresh Installation of ADSS Web RA

Before starting the ADSS Web RA installation process, make sure the following:

Prerequisites must be installed on the ADSS Web RA machine. If these are not installed, ADSS Web RA will not open and even cannot display any page when accessed. An empty database is created on the DMBS (SQL Server) with privileges for ADSS Web RA.

The ADSS Web RA package MUST be unzipped on to a disk that has sufficient space – a minimum of **100GB** is recommended. This is because the product is installed and runs from where the installation package is extracted to. Hence, choose a suitable location and naming structure. If you extract the installer on Desktop, it will not work so choose a proper drive to extract it.



Do not include spaces in the installation folder name and path – use hyphen or underscore characters instead, if required. Spaces will cause functional problems with ADSS Web RA installation. The installer must be run from a user account with the Windows Administrator privileges.

ADSS Web RA installer generates all the required database tables and populates the default data required to run the system. Therefore, there is no requirement for separate SQL scripts or equivalent for non-SQL databases.

4.1.1 Once the above conditions are satisfied, launch the installer by right-clicking the file **[WEBRA Installation-Dir]/setup/install** and select Run as administrator from the menu will present the welcome screen.

The following welcome screen is shown:

			\times
🗧 🔏 Web RA Installer			
Welcome to Web RA			
Web RA is a central application for key management and certificate generation in the Ascertia prod register users to offer them different sets of certification services. It can also register users to ADSS (RAS/SAM services as well as push users to Web RA. All of them are powerful applications to create documents using these keys. Web RA is ideal for the organizations that are looking to centrally con and distribution process by implementing strong vetting for the issuance of these certificates.	CSP services, certificates ar	ADSS nd sign th	ne
Web RA consists of the following modules:			
- Web RA Admin - Web RA Desktop Web - Web RA API (RESTful Web Services) - Web RA Device - Web RA Windows Enrolment We strongly recommend you to follow the installation instructions provided in <u>Web RA Installation</u>	<u>Guide</u>		
U.S. Patent No. 7,360,079			
	Next	Car	ncel

4.1.2 Click the 'Next' button to continue.

4.1.3 System requirements screen will appear next to validate if all the required prerequisites are installed or not. If any of ADSS Web RA system dependencies are not found, or not functioning, then Failed status will be shown corresponding to that component on the screen.

You can only proceed with the installation process once all issues related to system dependencies are resolved as shown below:

← 🔏 Web RA Installer	-		×
Checking System Requirements			
Microsoft .NET Framework v4.8 or above		Success	
ASP .Net Core v8.0.0 or above Microsoft Internet Information Services (IIS) v10.0 or above URL Rewrite in Internet Information Services (IIS)		Success Success Success	
ASP .Net Core Module in Internet Information Services (IIS) runtime support		Success	
[Next	Can	cel

4.1.4 Click the 'Next' button to select an installation type.

← 🔏 Web RA Installer	_		×
Installation Type			
Install Web RA for the first time			
Include sample data			
Install Web RA as another instance within a load-balanced configuration			
Install Web RA with an existing database			
O Upgrade an existing Web RA instance to the latest one			
Change database credentials			
O Uninstall Web RA			
	Next	Car	ncel

If you are installing ADSS Web RA for the first time or you wish to deploy a fresh installation with a new database, then select "Install Web RA for the first time". The "Install Web RA as another instance within a load-balanced configuration" option will install the ADSS Web RA instance in a load-balanced mode. If you wish to upgrade an older system to the latest version, then select "Upgrade" an existing ADSS Web RA instance to the latest one". Installer supports the upgrade when the base (current) installation is v2.1.1 or higher.

The **Install Web RA with an existing database** option will install ADSS Web RA against an existing ADSS Web RA database. For example, this option can be used to recover a system from a database back-up. The **Change database credentials** option is used if the database password, user, database name and/or server is changed, and it needs to be updated in ADSS Web RA installation. Select the last option **Uninstall Web RA** if you wish to uninstall ADSS Web RA from the system.



4.1.5 Select the option Install Web RA for the first time.

You can include sample data in application during fresh installation. Sample data includes following data:

- Default ADSS Connector
- Default SMTP Connector
- Default ADSS Service Profile
- Default Subscriber Agreement
- Default Vetting Form
- Default Service Plan
- Default Authentication Profile

If "Include Sample Data" is not selected then above data will not be added when application installed.

4.1.6 Click the **Next** button to show the **License Agreement**.

License Agreement		
License Agreement		
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT		^
IMPORTANT - PLEASE READ CAREFULLY:		1
1.0 ACCEPTANCE.		-
Ascertia Limited ("Ascertia") is willing to license this software (the Software) and documentat	ion (together the	
Product) in this installation package to you as an individual or as an authorised representative		
legal entity that will be using the Software only on condition that you accept all of the terms of agreement. You or the company or legal entity (referred to as the Licensee) can accept the ter		
Agreement by clicking on the "I agree" button below, and proceed with the installation. To re		
this License Agreement, click on the "I disagree" button below and exit the installation proces	s and make no	
further use of the software.		
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTE		
BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS	AGREEMENT, DO	
NOT INSTALL OR USE THE ASCERTIA SOFTWARE.		
Licensee and Ascertia may hereinafter be referred to as individually, a "Party", or, together, the	e "Parties."	
2.0 LICENSE		
Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may		
without charge until the evaluation limits are reached or for a maximum of 3 months from th install the Software. After this you must pay the appropriate license fee to continue to use the		
install the Software. After this you must pay the appropriate license fee to continue to use the	Software. To pay	~

4.1.3. Click the **I Agree** button to proceed.

4.1.7 The **Readme screen** will be displayed with new features list. Click **Next** button to proceed. The following screen for **Database Configurations** will be displayed.

Web RA Database	Configurations		
Database Management	System Type		
Microsoft SQL	Server		
Installation Type			
Basic	Advanced		
Database Configuration	ns		
Database Server:	Production-Server]	
Port:	1433		
Database Name:	WebRA]	
	Use windows authentication	_	
Username:	sa]	
Password:	*****]	

Furthermore, you can either choose to do a basic installation or use an advanced one. If this is a basic installation, then use the first option **Basic** and provide the appropriate ADSS Web RA database credentials. The information displayed above is an example and you should configure the relevant settings for your own environment.



0

Once you enter the database credentials and select Next, the installer uses the information to test the connectivity to the database. If the installer can establish the connection with the database, then it will proceed with the installation.

The following table explains the **Database Configurations**.

Item	Description
Database Server / Host Name	Database server IP or DNS name.
Port	Database listening port. For SQL Server the default port is 1433.
Database Name	Name of the database instance. Note this must exist prior to the installation.
Use Windows Authentication	If enabled, installer will use the Windows logged in user to communicate with database. You are required to enter password because it will be used in Application Pool to set the Identity against this user for all websites.
	By default, the current logged in user will be configured in the Application Pool Identity. If you wish to run ADSS Web RA under a different windows user, then you need to change it manually.
	If your requirement is to use SQL Server authentication, then type SQL Server Username and Password in the underneath fields without enabling this option.
Username	Name of the database user. Note this must exist prior to the installation. It is not required in the case of Windows Authentication.
Password	Password credential of the database user. Note this must exist prior to the installation. In case of Windows Authentication, type the password of domain user shown in the Username field to configure the Application Pool Identity in IIS Server for successful communication with SQL Server.

If you have chosen Advanced for database configurations, then the following screen will be shown.

- 🔏 Web RA Installer		
Web RA Database Con	figurations	
– Database Management Syst	ет Туре	
Microsoft SQL Serve	r	
Installation Type		
⊖ Basic	Advanced	
Database Configurations		
Connection String:	data source= Production-Server;initial catalog= WebR4;user id=sa;password=password;MultipleActiveResultSets=True;Pooling=true	
	Next	Cano



The information displayed above is an example and you should configure the relevant settings for your own environment.

Once you complete the options and select **Next**, the installer uses the information provided to test the connectivity to the database. If the installer can establish the connection with the database, then it will proceed with the installation.

The following table entails details of the Advanced Installation type:

ltem	Description
ADSS Web RA Connection String	 The following are sample connection strings for SQL Server: Simple One - "data source= [Database Server Address];initial catalog= [Database Name];user id=[Database User Name];password=[Database User Password];MultipleActiveResultSets=True;Pooling=true"
	 For Named instance - "data source= [Database Server Address]\[SQL Server Instance Name];initial catalog=[Database Name];user id=[Database User Name];password[Database User Password];MultipleActiveResultSets=True;Pooling=true"
	• For Windows Authentication - "data source= [Database Server Address];initial catalog=[Database Name];integrated security=SSPI;MultipleActiveResultSets=True;Pooling=true
Username	Field will only be shown in case of Windows Authentication while for SQL Server Authentication, username will be provided in the connection string.
Password	In case of Windows Authentication, type the password of domain user shown in the Username field to configure the Application Pool Identity in IIS Server for successful communication with SQL Server. In case of SQL Server authentication, password will be provided in the connection string.

If Windows authentication is enabled in connection string, installer will use the Windows logged in user to communicate with database upon clicking the **Next** button. You are required to enter password because it will be used in Application Pool to set the Identity against this user for all websites.

By default, the current logged in user will be configured in the Application Pool Identity. If you wish to run ADSS Web RA under a different Windows user, then you need to change it manually. As shown in the following Screen:

This page lets you vie isolation among diffe Filter:		t of applicatio	n nonic on the cen				
Filter:			in pools on the serv	er. Application pools a	re associated with worker processes, con	tain one or more applications, and	
	• 🍞 Go - 🔽	Show All	Group by: No Gro	uping •	Advanced Settings	'	×
Set App Start Stop Recycle Recycle Advanc Remove View Ap	Status Started Pication Pool Interference Started	NET CLR V v4.0 v4.0 v4.0 v4.0 v4.0 v4.0 v4.0 v		ApplicationPoold ApplicationPoold ApplicationPoold ApplicationPoold ApplicationPoold ApplicationPoold ApplicationPoold ApplicationPoold ApplicationPoold	Enable 32-Bit Applications Managed Pipeline Mode Name Queue Length Start Mode CPU Limit Action Limit Action Limit Action Limit Action Processor Affinity Mask Processor Affinity Mask (6-bit c Processor Affinity Mask (6-bit c Processor Affinity Mask (6-bit c Processor Affinity Mask Processor Affinity Mask Comment Life Time-out Action Meetity Jide Time-out Action	ascertia0\webra.qa 20 Terminate Configures the application pool to Pool Identity (recommended), Nets or as a specific user identity.	work
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Started Starte	Started v4.0 Started v4.0 St	Started v4.0 Classic Started v4.0 Integrated Add replication Pool Started v4.0 Started v4.0 Integrated Add replication Pool Started v4.0 Start Start Started Start Start Started Start Start Started Start Start Started Resycling Resycling Resycling Advanced Statings Respections Started	Started v4.0 Classic ApplicationPoold. Started v4.0 Integrated ApplicationPoold. Adversed Starting Started v4.0 Integrated ApplicationPoold. Started v4.0 Integrated ApplicationPoold. Starte	Started v.0 Classic ApplicationPoold Started v.0 Integrated ApplicationPoold Starte v.0 Integrated ApplicationPoold Starte v.0 Integrated ApplicationPoold Basic Strings Recycling Genrate Process Model Event L Basic Strings Re	Stated vid Integrated Application/solida False Stated vid Integrated Application/solida Banagad Pipelications False Stated vid Integrated Application/solida Managad Pipelications False Stated vid Integrated Application/solida Name veds Stated vid Integrated Application/solida Name veds Stated vid Integrated Application/solida OnDemand OnDemand Stated vid Integrated Application/solida Ondemand OnDemand Stated vid Integrated Application/solida OnDemand CPU Stated vid Integrated Application/solida OnDemand CPU State State State Application/solida OnDemand CPU State State State Application/solida State State



4.1.8 Click the Next button to select specific modules:

Fully Qualified D	omain Name:	server2022-WebRA.asce	ertia.com.pk		1	
Fully qualifie		be set for the all instance	es in system setting	s. It will not upd	」 ate the systen	n
Web RA Adn						
	Website Name:	admin	Port:	58]	
Web RA We	b					
	Website Name:	web	Port:	59]	
Web RA API	(RESTful Web Service					
	Website Name:	api	Port:	60]	

4.1.9 Select **Device Modules** to install the required features. The fully qualified domain name field will be auto-filled with complete computer name. For each selected application, provide the web application name and port. A typical in-house installation of ADSS Web RA should only include Admin, Desktop Web, and the API. However, the device will be added at the end. Click Next to proceed.

_	eb RA Device HTTP (Install SCEP)				
	Website Name:	device	Port:	61	
	HTTPS (Install SCEP, CMP, ACME, EST)				
	Website Name (SCEP, CMP, ACME, EST):	device	Port:	62	
	Client Authentication (Install EST)				
	Website Name (EST):	ssIdevice	Port:	63	

Select Windows Enrolment. For each selected application, provide the web application name and port. Then click Next.

_			
✓ Windows Enrolment			
Windows Integrated Authentication			
Certificate Enrolment Policy Service (CEP)	windowsIntegratedCepService	Port:	86
Certificate Enrolment Service (CES)	windowsIntegratedCesService	Port:	87
UserName / Password Authentication			
Certificate Enrolment Policy Service (CEP)	windowsUserNamePasswordCepService	Port:	88
Certificate Enrolment Service (CES)	windowsUserNamePasswordCesService	Port:	89
Client Authentication			
Certificate Enrolment Policy Service (CEP)	windowsSsICepService	Port:	90
Certificate Enrolment Service (CES)	windowsSsICesService	Port:	91

The information displayed above is an example, which you may change suiting to your environment and organisation preferences. However, the example shown is sufficient. The names will appear as websites under **IIS Manager**.

The following table entails details of the Windows Enrolment modules.

Item	Description
ADSS Web RA	ADSS Web RA Admin is used by the administrators to manage the
Admin	system wide configurations, service plans, user accounts and access control etc.
ADSS Web RA Web	ADSS Web RA Web is used to manage certificates for creation, renewal and revocation.
ADSS Web RA API	REST API is used to integrate ADSS Web RA functionality within your own portal.
ADSS Web RA Device	ADSS Web RA device is used to manage device enrolment for certificate creation, renewal and revocation. This site will be deployed with http and https bindings.
ADSS Web RA SSL Device	ADSS Web RA SSL device is used to manage device enrolment over SSL for certificate creation, renewal and revocation e.g. EST Protocol. This site will be deployed with https SSL.
Windows Enrolment	Windows Enrolment is used to manage certificate renewal or auto- enrolment on a windows machine.



4.1.10 Click the **Next** button to configure the **SMTP Server** and **Email Settings**.

Email Configuration	ons	
- SMTP Configurations		
SMTP Server:	mail.ascertia.com	
Port:	25	
	Use SSL/TLS authentication	
	Use username/password authentication	
Username:	smtp-user	
Password:	*****	
From:	notifications@ascertia.com	
	All email notifications will be sent from this address.	
- Failure Email Configu	rations	
To:	support@ascertia.com	
	In case of errors/warnings emails will be sent at this address.	
Subject:	Web RA Notification Test Email	
	Subject for errors/warnings emails.	

Configure SMTP Server and email settings for your environment. ADSS Web RA must have access to a suitable SMTP Server without which users will not be able to receive registration emails that are required to complete the user registration process.

Additionally, system generated email notifications will not be received either. Although the latter will not prevent functionality, but it is not a recommended approach. The information displayed above is an example and you should setup configurations for your own environment. The configuration items are explained in the following table:

ltem	Description					
SMTP Server	Defines the email server address. This email server is used to send email notifications to users as required, such as for account registration, data sharing etc. It is also used for sending notification emails to ADSS Web RA administrators.					
Port	Define the service port for the SMTP mail server.					
Use SSL/ TLS authentication	Select this option if the SMTP mail server requires SSL/TLS.					
Username	Configure the SMTP mail server username that is used to send ADSS Web RA generated emails.					
Password	Define the password to authenticate the SMTP server.					
From	Configure the From email address that should be used to send notification emails to users and administrators.					
То	Configure the email address where error notifications should be sent. This is usually the IT support team address.					
Subject	Define a subject line for the notification emails that are sent to the administrator, e.g. ADSS Web RA Alert.					

After configuring these SMTP settings, click the **Test Email** button to verify that SMTP configurations are valid.



If "Include Sample Data" is not selected then SMTP configuration screen will not be shown.



4.1.11 Click the Next button to see the Installation Summary and complete the installation process.

	_		\times
🗧 🤧 Web RA Installer			
Web RA Installation Summary			
Web IN Installation Summary			
The following modules will be installed:			
- Web RA Admin - Web RA Web			
- Web RA API (RESTful Web Services)			
- Web RA Device - Web RA SSL Device			
- Web RA Windows Enrolment Services			
	Next	Car	ncel

This screen shows the installation summary by listing different product modules that will be installed.

If you think any listed item is incorrect then use the Back button (arrow towards the top-left of the dialogue box) to correct your choices before proceeding ahead.

Otherwise, click the **Next** button to continue with the installation.

1			
Installation Progress			
			L
Executing database script for Web RA on database: WebRA-Database		^	1
Executing identity script for Web RA on database: WebRA-Database			
Executing Weak Debian script for Web RA on database: WebRA-Database			
Creating default configurations			
Creating default connectors and Certification profiles			
Updating SMTP configurations in database			
Creating website for Web RA Admin: admin			
Creating website for Web RA Web; web			
Creating website for Web RA API: api Creating website for Web RA Device: device			
Creating HTTPS binding for Web RA Device: device			
Creating website for Web RA SSL Device: ssldevice			L
Creating windows integrated CEP service site : windowsIntegratedCepServi	ce		
Creating windows integrated windows CES service site : windowsIntegrated			L
Creating UserName/Password windows CEP service site : windowsIntegrate			L
Creating UserName/Password windows CES service site : windowsIntegrate	dCesService		
Creating SSL windows CEP service site : windowsIntegratedCepService			L
Creating SSL windows CES service site : windowsSsICesService			L
Updating system settings			L
Web RA installation completed!		~	L

4.1.12 Click **Finish** to complete the installation process.



4.1.13 ADSS Web RA URLs

Service	URL Format	Example
ADSS Web RA Admin	https:// <machine-name>:PORT</machine-name>	https://localhost:443
ADSS Web RA Desktop Web	https:// <machine-name>:PORT</machine-name>	https://localhost:81
ADSS Web RA API	https:// <machine-name>:PORT</machine-name>	https://localhost:82
ADSS Web RA Device	https:// <machine-name>:PORT</machine-name>	http://localhost:83 https://localhost:84
ADSS Web RA SSL Device	https:// <machine-name>:PORT</machine-name>	https://localhost:85 https://localhost:86
ADSS Web RA Windows Integrated CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:87
ADSS Web RA Windows Integrated CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:88
ADSS Web RA Windows SSL CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:89
ADSS Web RA Windows SSL CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:90
ADSS Web RA Windows User Name Password CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:91
ADSS Web RA Windows User Name Password CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:92

Use the following URLs to access the ADSS Web RA Server web sites:

Where necessary (i.e. browsing Admin website) your web browser will prompt you to select the appropriate certificate for authentication purposes. The installation process places the necessary certificates into the Windows Security Store, Internet Explorer, Edge, Chrome and related browsers that rely on the security store, can use them as such.

If you wish to use Firefox and similar web browsers that utilize their own respective security stores you will need to import adss-default-admin.pfx and WebRA-default-

admin.cer from [WebRAInstallationDirectory]/setup/certs directory.

There are two options to set secure binding against each ADSS Web RA site:

• Using standard IIS web server HTTP redirects. This means the basic installation is done with various ADSS Web RA sites, where each site has their respective default port/binding but no host name. You can then add new sites for each web site and bind this to the desired external public facing host name and secure port, likely to be 443. Each site can be configured in such a fashion.

Each default ADSS Web RA site can then be configured to permanently redirect to the secure version.

• Once the deployment of ADSS Web RA is completed, the bindings of each site can be changed to use a secure (443) port. The new binding will include the appropriate public facing host name.

Once the bindings of IIS web sites have been put in place, access the ADSS Web RA Administration console and make changes to the general configuration settings. This means changing the public and private URLs for the Desktop Web and API sites accordingly. Once it is complete, save the changes and publish them.



The second option is recommended.

Note: Microsoft Windows Server: TLS 1.3 is enabled by default for installations of Windows Server 2022, integrated applications should support this version of TLS. For application integrations that do not support this and need to be updated, customers can disable TLS 1.3 over TCP in the IIS Bindings



4.2 Installing ADSS Web RA with A Load-Balanced Configuration

Follow these instructions to install ADSS Web RA with a load-balanced configuration.

4.2.1 Launch the installer by right-clicking on the file name [Web RA Installation Directory]/setup/install.bat and select Run as administrator.

Follow the installation wizard as described previously until the Installation Type screen is shown:

4.2.2 Select the option Install ADSS Web RA as another instance within a load-balanced configuration.

	—		×
🐍 Web RA Installer			
Installation Type			
O Install Web RA for the first time			
Install Web RA as another instance within a load-balanced configuration			
Install Web RA with an existing database			
O Upgrade an existing Web RA instance to the latest one			
Change database credentials			
🔿 Uninstall Web RA			
	Next	t Ca	incel

4.2.3 Click the Next button to show the License Agreement.

License Agreement	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT	^
IMPORTANT - PLEASE READ CAREFULLY:	
1.0 ACCEPTANCE.	
Ascertia Limited ("Ascertia") is willing to license this software (the Software) and documentation (together the Product) in this installation package to you as an individual or as an authorised representative of the company or	
Product) in this installation package to you as an individual or as an authorised representative of the company of legal entity that will be using the Software only on condition that you accept all of the terms of this license	
agreement. You or the company or legal entity (referred to as the Licensee) can accept the terms of this License	
Agreement by clicking on the "I agree" button below, and proceed with the installation. To reject the terms of	
this License Agreement, click on the "I disagree" button below and exit the installation process and make no further use of the software.	
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO BE BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT. DO	
NOT INSTALL OR USE THE ASCERTIA SOFTWARE.	
Licensee and Ascertia may hereinafter be referred to as individually, a "Party", or, together, the "Parties."	
2.0 LICENSE	
Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may use the Software	
without charge until the evaluation limits are reached or for a maximum of 3 months from the day that you	
install the Software. After this you must pay the appropriate license fee to continue to use the Software. To pay	



- 4.2.4 Click the I Agree button to continue.
- 4.2.5 The Readme screen will be displayed with new features list. Click Next to proceed.
- 4.2.6 The following screen for **Database Configurations** will be displayed. Enter the required fields and click **Next**.

Veb RA Database	Configurations		
Database Managemen	t System Type		
Microsoft SQL	Server		
Installation Type			
Basic	Advanced		
Database Configuratio	ns		
Database Server:	Production-Server		
Port:	1433		
Database Name:	WebRA		
	Use windows authentication		
Username:	sa		
Password:	*********		

The information displayed above is an example and you should configure the relevant settings for your own environment.



The ADSS Web RA database schema and the version required by the installer must be the same.

If the current ADSS Web RA database schema is older than the version required by the installer, and you click **Next**, the installer will prompt you that ADSS Web RA database schema will be upgraded to the latest version. Click **OK** to authorise the schema update.

Furthermore, you can either choose to do a basic installation or use an advanced one. If this is a basic installation, then use the first option **Basic** and provide the appropriate ADSS Web RA database credentials. The information displayed above is an example and you should configure the relevant settings for your own environment.



Once you have entered the database credentials and select Next, the installer uses the information to test the connectivity to the database. If the installer can establish the connection with the database, then it will proceed with the installation.



The following table explains the **Database Configurations** screen.

Item	Description
Database Server / Host Name	Database server IP or DNS name.
Port	Database listening port. For SQL Server the default port is 1433.
Database Name	Name of the database instance. Note this must exist prior to the installation.
Use Windows Authentication	If enabled, installer will use the Windows logged in user to communicate with database. You are required to enter password because it will be used in Application Pool to set the Identity against this user for all websites.
	By default, the current logged in user will be configured in the Application Pool Identity. If you wish to run ADSS Web RA under a different windows user, then you need to change it manually.
	If your requirement is to use SQL Server authentication, then type SQL Server Username and Password in the underneath fields without enabling this option.
Username	Name of the database user. Note this must exist prior to the installation. It is not required in the case of Windows Authentication.
Password	Password credential of the database user. Note this must exist prior to the installation. In case of Windows Authentication, type the password of domain user shown in the Username field to configure the Application Pool Identity in IIS Server for successful communication with SQL Server.

If this is not a basic installation and you choose the second option to "**Advanced**" then the following screen is shown:

🔶 🤧 Web RA Installer		×
Web RA Database Cont	ïgurations	
 Database Management Syste Microsoft SQL Server 		
Installation Type	Advanced Advanced	
Database Configurations Connection String:	data source= Production-Server;initial catalog= WebRA;user id=sa;password=password;MultipleActiveResultSets=True;Pooling=true	
	Next Ca	ncel

The information displayed above is an example and you should configure the relevant settings for your own environment.

Once you complete the options and select **Next**, the installer uses the information provided to test the connectivity to the database. If the installer can establish the connection with the database, then it will proceed with the installation.

The following table entails details of the configuration options:

ltem	Description
ADSS Web RA Connection String	 The following are sample connection strings for SQL Server: Simple One - "data source= [Database Server Address];initial catalog= [Database Name];user id=[Database User Name];password=[Database User Password];MultipleActiveResultSets=True;Pooling=true"
	 For Named instance - "data source= [Database Server Address]\[SQL Server Instance Name];initial catalog=[Database Name];user id=[Database User Name];password[Database User Password];MultipleActiveResultSets=True;Pooling=true"
	• For Windows Authentication - "data source= [Database Server Address];initial catalog=[Database Name];integrated security=SSPI;MultipleActiveResultSets=True;Pooling=true
Username	Field will only be shown in case of Windows Authentication while for SQL Server Authentication, username will be provided in the connection string.
Password	In case of Windows Authentication, type the password of domain user shown in the Username field to configure the Application Pool Identity in IIS Server for successful communication with SQL Server. In case of SQL Server authentication, password will be provided in the connection string.

4.2.7 Click the Next button to select Web RA Modules.

	_		\times
← 🔏 Web RA Installer			
Web RA Modules			
Fully Qualified Domain Name: webra.ascertia.com.pk			
 Fully qualified domain name will be set for the all instances in system settings. It will not update setting for existing instances. 	the syster	m	
☑ Web RA Admin			
Website Name: admin Port: 443			
Web RA Web			
Website Name: web Port: 81			
✓ Web RA API (RESTful Web Services)			
Website Name: api Port: 82			
	Next	Can	ncel



4.2.8 Select the appropriate modules to install the required features. For each selected application, provide the web application name and port and click **Next**. A typical in-house installation of ADSS Web RA should only include Admin, Desktop Web, and the API and lastly, the device will be added.

🔶 🔥 Web RA Installer				_		×
Web RA Device Modules						
Web RA Device						_
HTTP (Install SCEP)						
Website Name:	device	Port:	84			
HTTPS (Install CMP, ACME, EST)						
Website Name (CMP, ACME, EST):	device	Port:	85			
Client Authentication (Install EST)						
Website Name (EST):	ssIdevice	Port:	86			
			N	ext	Cano	el:

4.2.9 Select **Windows Enrolment**. For each selected application, provide the web application name and port. Then click **Next**.

Wi	ndows Enrolment Modules				
	☑ Windows Enrolment				
	Windows Integrated Authentication				
	Certificate Enrolment Policy Service (CEP)	windowsIntegratedCepService	Port:	87	
	Certificat Enrolement Service (CES)	windowsIntegratedCesService	Port:	88]
	UserName / Password Authentication				
	Certificate Enrolment Policy Service (CEP)	windowsUserNamePasswordCepService	Port:	89]
	Certificat Enrolement Service (CES)	windowsUserNamePasswordCesService	Port:	90]
	Client Authentication				
	Certificate Enrolment Policy Service (CEP)	windowsSslCepService	Port:	91	1
	Certificat Enrolement Service (CES)	windowsSsICesService	Port:	92]

The information displayed above is an example, which you may change to suit your environment and organisation preferences. However, the example shown is sufficient. The names will appear as websites under IIS Manager.



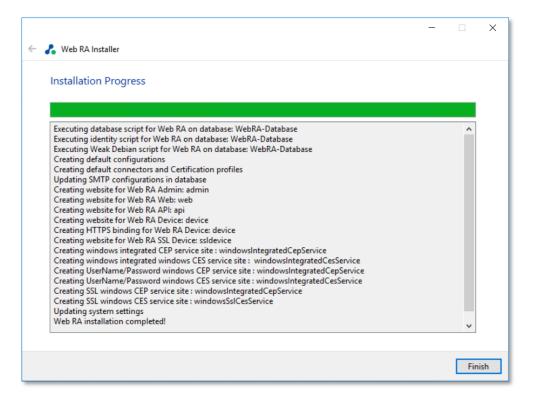
The following table explains the Windows Enrolment section.

ltem	Description
ADSS Web RA Admin	ADSS Web RA Admin is used by the administrators to manage the system wide configurations, service plans, user accounts and access control etc.
ADSS Web RA Web	ADSS Web RA Web is used to manage certificates for creation, renewal and revocation.
ADSS Web RA API	REST API is used to integrate ADSS Web RA functionality within your own portal.
ADSS Web RA Device	ADSS Web RA device is used to manage device enrolment for certificate creation, renewal and revocation. This site will be deployed with http and https bindings.
ADSS Web RA SSL Device	ADSS Web RA SSL device is used to manage device enrolment over SSL for certificate creation, renewal and revocation e.g. EST Protocol. This site will be deployed with https SSL.
Windows Enrolment	Windows Enrolment is used to manage certificate renewal or auto- enrolment on a windows machine.

4.2.10 Click the Next button to show the Installation Summary and complete the installation.

	_		×
← 🔧 Web RA Installer			
Web RA Installation Summary			
web for installation burnnary			
The following modules will be installed:			
- Web RA Admin - Web RA Web			
- Web RA API (RESTful Web Services)			
- Web RA Device			
- Web RA SSL Device - Web RA Windows Enrolment Services			
reprovement serves			
	Net	6	and a
	Next	Car	ncel

This screen shows the installation summary by listing the different product modules that will be installed. If you think any listed item is incorrect then use the **Back** button (arrow towards the top-left of the dialogue box) to correct your choices before proceeding.



4.2.11 Click Finish to complete the installation process.

4.2.12 ADSS Web RA URLs

Use the following URLs to access the ADSS Web RA Server Web sites:

Service	URL Format	Example
ADSS Web RA Admin	https:// <machine-name>:PORT</machine-name>	https://localhost:443
ADSS Web RA Desktop Web	https:// <machine-name>:PORT</machine-name>	https://localhost:81
ADSS Web RA API	https:// <machine-name>:PORT</machine-name>	https://localhost:82
ADSS Web RA Device	https:// <machine-name>:PORT</machine-name>	http://localhost:83 https://localhost:84
ADSS Web RA SSL Device	https:// <machine-name>:PORT</machine-name>	https://localhost:85 https://localhost:86
ADSS Web RA Windows Integrated CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:87
ADSS Web RA Windows Integrated CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:88
ADSS Web RA Windows SSL CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:89
ADSS Web RA Windows SSL CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:90





ADSS Web RA Windows User Name Password CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:91
ADSS Web RA Windows User Name Password CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:92



The site IDs of deployed IIS websites should be the same across all the instances in a load balanced environment to run Web RA application properly. Therefore, to ensure a successful load-balanced installation, you should check that the required site IDs on the primary instance are also available on the secondary instance(s). If the site IDs are already used on the secondary instance(s), the load-balanced installations will not be able to complete successfully.



4.3 Installing ADSS Web RA with an Existing Database

In order to install the ADSS Web RA with an existing database, follow the below mentioned installation instructions:

4.3.1 Launch the installer by right-clicking on the file name [ADSS Web RA Installation Directory]/setup/install.bat and select Run as administrator. Follow the installation wizard as described previously until the Installation Type screen is shown:

4.3.2 Select the option Install ADSS Web RA within an existing database.

	_		×
🗧 🤧 Web RA Installer			
Installation Type			
Install Web RA for the first time			
Install Web RA as another instance within a load-balanced configuration			
Install Web RA with an existing database			
O Upgrade an existing Web RA instance to the latest one			
O Change database credentials			
O Uninstall Web RA			
r i i i i i i i i i i i i i i i i i i i	Next	Can	col
l	IVEXT	Can	icei

4.3.3 Click the Next button to show the License Agreement.

License Agreement	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT IMPORTANT - PLEASE READ CAREFULLY:	^
1.0 ACCEPTANCE. Ascertia Limited ("Ascertia") is willing to license this software (the Software) and documentation (toge Product) in this installation package to you as an individual or as an authorised representative of the co- legal entity that will be using the Software only on condition that you accept all of the terms of this lic agreement. You or the company or legal entity (referred to as the Licensee) can accept the terms of thi Agreement by clicking on the "I agree" button below, and proceed with the installation. To reject the t this License Agreement, click on the "I disagree" button below and exit the installation process and ma further use of the software.	ompany or ense is License terms of
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE ' BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEI NOT INSTALL OR USE THE ASCERTIA SOFTWARE.	
Licensee and Ascertia may hereinafter be referred to as individually, a "Party", or, together, the "Parties	5."
2.0 LICENSE Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may use the without charge until the evaluation limits are reached or for a maximum of 3 months from the day tha install the Software. After this you must pay the appropriate license fee to continue to use the Softwar	at you

- 4.3.4 Click the I Agree button to continue.
- 4.3.5 The **Readme screen** will be displayed with new features list. Click **Next** to proceed. The following screen for **Database Configurations** will be displayed:

Database Managemen	t System Type	
Microsoft SQL		
Installation Type		
Basic	Advanced	
Database Configuratio	ns	
Database Server:	Production-Server	
Port:	1433	
Database Name:	WebRA	
	Use windows authentication	
Username:	sa	
Password:	*********	
		_

The information displayed above is an example and you should configure the relevant settings for your own environment.



The ADSS Web RA database schema and the version required by the installer must be the same.

If the current ADSS Web RA database schema is older than the version required by the installer, and you click **Next**, the installer will prompt you that ADSS Web RA database schema will be upgraded to the latest version. Click **OK** to authorise the schema update.

Furthermore, you can either choose to do a basic installation or use an advanced one. If this is a basic installation, then use the first option **Basic** and provide the appropriate ADSS Web RA database credentials. The information displayed above is an example and you should configure the relevant settings for your own environment.



Once you have entered the database credentials and select Next, the installer uses the information to test the connectivity to the database. If the installer can establish the connection with the database, then it will proceed with the installation.



The following table explains the Database Configurations.

ltem	Description
Database Server / Host Name	Database server IP or DNS name.
Port	Database listening port. For SQL Server the default port is 1433.
Database Name	Name of the database instance. Note this must exist prior to the installation.
Use Windows Authentication	If enabled, installer will use the Windows logged in user to communicate with database. You are required to enter password because it will be used in Application Pool to set the Identity against this user for all websites.
	By default, the current logged in user will be configured in the Application Pool Identity. If you wish to run ADSS Web RA under a different windows user, then you need to change it manually.
	If your requirement is to use SQL Server authentication, then type SQL Server Username and Password in the underneath fields without enabling this option.
Username	Name of the database user. Note this must exist prior to the installation. It is not required in the case of Windows Authentication.
Password	Password credential of the database user. Note this must exist prior to the installation. In case of Windows Authentication, type the password of domain user shown in the Username field to configure the Application Pool Identity in IIS Server for successful communication with SQL Server.

If this is not a basic installation and you choose the second option to "Advanced" then the following screen is shown.

 ← ♣ Web RA Installer Web RA Database Config 	urations		×
Database Management System	Туре		
Microsoft SQL Server			
Installation Type			
⊖ Basic	Advanced		
Database Configurations			
Connection String:	data source= Production-Server;initial catalog= WebRA;user id=sa;password=password;MultipleActiveResultSets=True;Pooling=true		
			_
	Next	Can	icel

The information displayed above is an example and you should configure the relevant settings for your own environment.

Once you complete the options and select **Next**, the installer uses the information provided to test the connectivity to the database. If the installer can establish the connection with the database, then it will proceed with the installation.

ltem	Description
ADSS Web RA Connection String	The following are sample connection strings for SQL Server: Simple One - "data source= [Database Server Address];initial catalog= [Database Name];user id=[Database User Name];password=[Database User Password];MultipleActiveResultSets=True;Pooling=true"
	 For Named instance - "data source= [Database Server Address]\[SQL Server Instance Name];initial catalog=[Database Name];user id=[Database User Name];password[Database User Password];MultipleActiveResultSets=True;Pooling=true"
	• For Windows Authentication - "data source= [Database Server Address];initial catalog=[Database Name];integrated security=SSPI;MultipleActiveResultSets=True;Pooling=true
Username	Field will only be shown in case of Windows Authentication while for SQL Server Authentication, username will be provided in the connection string.
Password	In case of Windows Authentication, type the password of domain user shown in the Username field to configure the Application Pool Identity in IIS Server for successful communication with SQL Server. In case of SQL Server authentication, password will be provided in the connection string.

4.3.6 Click the **Next** button to select **Web RA Modules**.

eb RA Module:	S				
Fully Qualified Dor	main Name:	webra.ascertia.com.pk			
Fully qualified setting for exist		be set for the all instances in	system settings	. It will not upda	te the system
🗹 Web RA Admir	1				
	Website Name:	admin	Port:	443	
🗹 Web RA Web					
	Website Name:	web	Port:	81	
🗹 Web RA API (R	ESTful Web Service	s)			
	Website Name:	api	Port:	82	

4.3.7 Select **modules** to install the required features. For each selected application, provide the web application name and port. A typical in-house installation of ADSS Web RA should only include Admin, Desktop Web, and the API. However, the device will be added at the end. Click **Next** to proceed.

Web RA Device		
HTTP (Install SCEP) Website Name:	device	Port: 84
HTTPS (Install CMP, ACME, EST)		
Website Name (CMP, ACME, EST):	device	Port: 85
Client Authentication (Install EST)		
Website Name (EST):	ssldevice	Port: 86
	ssldevice	Port: 86

4.3.8 Select **Windows Enrolment**. For each selected application, provide the web application name and port. Then click **Next**.

indows Enrolment Modules				
Windows Enrolment				
Windows Integrated Authentication				
Certificate Enrolment Policy Service (CEP)	windowsIntegratedCepService	Port:	87	
Certificat Enrolement Service (CES)	windowsIntegratedCesService	Port:	88	
UserName / Password Authentication				
Certificate Enrolment Policy Service (CEP)	windowsUserNamePasswordCepService	Port:	89	
Certificat Enrolement Service (CES)	windowsUserNamePasswordCesService	Port:	90	
Client Authentication				
Certificate Enrolment Policy Service (CEP)	windowsSslCepService	Port:	91	
Certificat Enrolement Service (CES)	windowsSslCesService	Port:	92	

The information displayed above is an example, which you may change to suit your environment and organisation preferences. The names will appear as websites under IIS.



The following table explains the Windows Enrolment Modules.

ltem	Description
ADSS Web RA Admin	ADSS Web RA Admin is used by the administrators to manage the system wide configurations, service plans, user accounts and access control etc.
ADSS Web RA Web	ADSS Web RA Web is used to manage certificates for creation, renewal and revocation.
ADSS Web RA API	REST API is used to integrate ADSS Web RA functionality within your own portal.
ADSS Web RA Device	ADSS Web RA device is used to manage device enrolment for certificate creation, renewal and revocation. This site will be deployed with http and https bindings.
ADSS Web RA SSL Device	ADSS Web RA SSL device is used to manage device enrolment over SSL for certificate creation, renewal and revocation e.g. EST Protocol. This site will be deployed with https SSL.
Windows Enrolment	Windows Enrolment is used to manage certificate renewal or auto- enrolment on a windows machine.

4.3.9 Click the **Next** button to see the summary and complete the installation.

		-		×
Web RA Installer				
Web RA Installation Summary				
The following modules will be installed: - Web RA Admin				
- Web RA Web - Web RA API (RESTful Web Services) - Web RA Device				
- Web RA SSL Device - Web RA Windows Enrolment Services				
	[Next	Car	ncel

This screen shows the installation summary by listing the different product modules that will be installed.

If you think any listed item is incorrect then use the **Back** button (arrow towards the top-left of the dialogue box) to correct your choices before proceeding ahead.



4.3.10 Click the **Next** button to continue with the installation.

	on Progress	
Execution	database script for Web RA on database: WebRA-Database	^
	identity script for Web RA on database: WebRA-Database	^
	Weak Debian script for Web RA on database: WebRA-Database	
	lefault configurations	
	lefault connectors and Certification profiles	
Updating	SMTP configurations in database	
	vebsite for Web RA Admin: admin	
	vebsite for Web RA Web: web	
	vebsite for Web RA API: api	
	vebsite for Web RA Device: device	
	ITTPS binding for Web RA Device: device vebsite for Web Device: ssldevice	
	vindows integrated CEP service site : windowsIntegratedCepService	
	vindows integrated CEP service site : windowsintegrated CepService	
	JserName/Password windows CEP service site : windowsIntegratedCepService	
	JserName/Password windows CES service site : windowsIntegratedCesService	
	SL windows CEP service site : windowsIntegratedCepService	
	SL windows CES service site : windowsSslCesService	
Updating	system settings	
	istallation completed!	

Click the Finish button to complete the installation process.

4.3.11 ADSS Web RA URLs

See these URLs to access the ADSS Web RA web sites:

Service	URL Format	Example
ADSS Web RA Admin	https:// <machine-name>:PORT</machine-name>	https://localhost:443
ADSS Web RA Desktop Web	https:// <machine-name>:PORT</machine-name>	https://localhost:81
ADSS Web RA API	https:// <machine-name>:PORT</machine-name>	https://localhost:82
ADSS Web RA Device	https:// <machine-name>:PORT</machine-name>	http://localhost:83 https://localhost:84
ADSS Web RA SSL Device	https:// <machine-name>:PORT</machine-name>	https://localhost:85 https://localhost:86
ADSS Web RA Windows Integrated CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:87
ADSS Web RA Windows Integrated CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:88
ADSS Web RA Windows SSL CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:89
ADSS Web RA Windows SSL CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:90

ADSS Web RA Windows User Name Password CEP Service	https:// <machine-name>:PORT</machine-name>	https://localhost:91
ADSS Web RA Windows User Name Password CES Service	https:// <machine-name>:PORT</machine-name>	https://localhost:92



4.4 Upgrading ADSS Web RA

The upgrade process for ADSS Web RA is quick and easy. The existing data files, database schema and database entries are automatically upgraded during the process.

Follow these instructions to upgrade an older version of ADSS Web RA to the latest version.

4.4.1. Launch the installer by right-clicking on the file name **[ADSS Web RA Installation Directory]/setup/install.bat** and select **Run as administrator**.

Follow the installation wizard as described previously until the Installation Type screen is shown:

4.4.2. Select the option Upgrade an existing ADSS Web RA instance to the latest one

	-		×
🔶 🔏 Web RA Installer			
Installation Type			
O Install Web RA for the first time			
O Install Web RA as another instance within a load-balanced configuration			
Install Web RA with an existing database			
Upgrade an existing Web RA instance to the latest one			
Change database credentials			
O Uninstall Web RA			
_			
L	Next	Car	ncel

4.4.3. Click the Next button to view and accept the License Agreement.

license Agreement	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT	^
IMPORTANT - PLEASE READ CAREFULLY:	
1.0 ACCEPTANCE.	
Ascertia Limited ("Ascertia") is willing to license this software (the Software) and documentation (toge Product) in this installation package to you as an individual or as an authorised representative of the co legal entity that will be using the Software only on condition that you accept all of the terms of this lice agreement. You or the company or legal entity (referred to as the Licensee) can accept the terms of this Agreement by clicking on the "I agree" button below, and proceed with the installation. To reject the t this License Agreement, click on the "I disagree" button below and exit the installation process and ma further use of the software.	ompany or ense is License terms of
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEI NOT INSTALL OR USE THE ASCERTIA SOFTWARE.	
Licensee and Ascertia may hereinafter be referred to as individually, a "Party", or, together, the "Parties	
2.0 LICENSE	
Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may use the without charge until the evaluation limits are reached or for a maximum of 3 months from the day tha install the Software. After this you must pay the appropriate license fee to continue to use the Software	t you



4.4.4. Click the I Agree button to proceed

4.4.5. The next appearing screen will be for ReadMe text. This includes all features of current version. Click **Next** to proceed.

Web RA Installer	
Existing Web RA Configurations	
Browse the existing Web RA installation directory:	
C:\WebRA-Deployment\WebRA_AGCE\WebRA-v2.8-Win64-12Jun2023	Browse
Before continuing - ensure that you have taken a backup of the ADSS Web RA	

4.4.6. Click Browse and define the path to the existing ADSS Web RA installation directory.

4.4.7. Click the Next button to select Web RA Modules.

						-		×
←	💦 Web RA Installer							
	Web RA Modules							
	Web RA Admin	Vebsite Name: admin	Por	t: 444				
	Web RA Web	Vebsite Name: web	Por	t: 81				
	Web RA API (RES	ul Web Services) Vebsite Name: api	Por	t: 83				
					N	ext	Car	icel



4.4.1. Select **Device Modules** to install the required features. For each selected application, provide the web application name and port. A typical in-house installation of ADSS Web RA should only include Admin, Desktop Web, and the API. However, the device will be added at the end. Click **Next** to proceed.

Web RA Device					
- ₩ HTTP (Install SCI		device	Port:	84	
HTTPS (Install C	MP, ACME, EST)				
Website	Name (CMP, ACME, EST):	device	Port	85	
Client Authentic	ation (Install EST)				
Website	Name (EST):	ssIdevice	Port:	86	

4.4.2. Select **Windows Enrolment**. For each selected application, provide the web application name and port. Then click **Next**.

indows Enrolment Modules			
Windows Enrolment			
Windows Integrated Authentication			
Certificate Enrolment Policy Service (CEP)	windowsIntegratedCepService	Port:	87
Certificat Enrolement Service (CES)	windowsIntegratedCesService	Port:	88
UserName / Password Authentication			
Certificate Enrolment Policy Service (CEP)	windowsUserNamePasswordCepService	Port:	89
Certificat Enrolement Service (CES)	windowsUserNamePasswordCesService	Port:	90
Client Authentication			
Certificate Enrolment Policy Service (CEP)	windowsSsICepService	Port:	91
Certificat Enrolement Service (CES)	windowsSslCesService	Port:	92

This screen shows a list of all ADSS **Web RA modules**. Components that are already installed are displayed but **greyed** out, while any ADSS Web RA module(s) that have not been installed previously can be selected for installation during the upgrade.



4.4.3. Click the Next button to see the Upgrade Summary.

Existing Installation	
Installation Path: C:\Installer\WebRA-v2.1-Win64-31Mar2020	
Web RA Version: 2000	
Web RA Database Version: 2000	
Machine Name / Port: 192.168.2.64 / 1433	
Database Name: WEBRA	
New Installation	
Installation Path: C:\Installer\WebRA-v2.1-Win64-31Mar2020	
Web RA Version: 2100	
Web RA Database Version: 2100	
Machine Name / Port: 192.168.2.64 / 1433	
Database Name: WEBRA	

4.4.4. Click the Next button to start the upgrade progress.

Upgrade Progress	
Changing website paths to the new Web RA directory	<u>^</u>
Updating system settings	
Web RA upgrade completed!	
	~

4.4.5. Click the **Finish** button to complete the ADSS Web RA upgrade process.

It is recommended to restart IIS after upgrade installation of ADSS Web RA.



4.5 Upgrade Web RA by adding modules

The Web RA installer allows you to add modules to your deployment at a later time if they were not installed initially. For example, if a user installs the Web RA application with the Admin, Web, and API modules but skips the Device Enrolments or Windows Enrolments modules, he can upgrade the existing deployment by adding these skipped modules when needed.

For example base version is v2.9 then follow the below steps:

4.5.1. Launch the installer by right-clicking on the file name [ADSS Web RA Installation Directory]/setup/install.bat and select Run as administrator.

Follow the installation wizard as described previously until the **Installation Type** screen is shown:

4.5.2. Select the option Upgrade an existing ADSS Web RA instance to the latest one

	_		×
← 💑 Web RA Installer			
Installation Type			
Install Web RA for the first time			
Install Web RA as another instance within a load-balanced configuration			
Install Web RA with an existing database			
Opgrade an existing Web RA instance to the latest one			
Change database credentials			
🔿 Uninstall Web RA			
	Next	Car	ncel

4.5.3. Click the **Next** button to view and accept the **License Agreement**.



License Agreement	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT	^
IMPORTANT - PLEASE READ CAREFULLY:	
1.0 ACCEPTANCE.	
Ascertia Limited ("Ascertia") is willing to license this software (the Software) and documentation (togs	
Product) in this installation package to you as an individual or as an authorised representative of the c	
legal entity that will be using the Software only on condition that you accept all of the terms of this lic agreement. You or the company or legal entity (referred to as the Licensee) can accept the terms of th	
Agreement by clicking on the "I agree" button below, and proceed with the installation. To reject the	
this License Agreement, click on the "I disagree" button below and exit the installation process and ma	
further use of the software.	
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE	TO BE
BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREE	
NOT INSTALL OR USE THE ASCERTIA SOFTWARE.	
Licensee and Ascertia may hereinafter be referred to as individually, a "Party", or, together, the "Parties	s."
2.0 LICENSE	
Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may use the	Software
without charge until the evaluation limits are reached or for a maximum of 3 months from the day that	
install the Software. After this you must pay the appropriate license fee to continue to use the Software	re. To pay

4.5.4. Click the I Agree button to proceed

4.5.5. The next appearing screen will be for Readme text. This includes all features of current version. Click **Next** to proceed.

READ	ИЕ	
upgradi	eck Enable Key Encryption Key (KEK) option in data security section in Web RA admin portal before ng to latest version. ult Web RA installation guide for regular release upgrade.	^
ADSS W	eb RA Server 2.9.2 supports	
scan ne	ring ADSS Web RA Certificate Locator, this release of ADSS Web RA Server adds support for operators to twork hosts and local CAPI and Java key stores to locate digital certificates that can then be manually or tically sent to Web RA Server.	
enable a	Server now provides the ability for operators to assign newly discovered certificates to Web RA users to nutomatic email notification for certificate expiry events, or to enable certificate owners to configure Web art managing the certificate using an existing mechanism such as SCEP, ACME, EST etc.	
Web RA user poi	users can assign, manage, renew, and revoke certificates that have been assigned to them via the Web RA tal.	
	n view external certificate statistics from the dashboard and can perform sorting, modifications, advanced and reporting on certificates if allowed in their user role.	

4.5.6. Click Browse and define the path to the existing ADSS Web RA installation base directory.

	-		×
🗧 🔧 Web RA Installer			
Existing Web RA Configurations			
Browse the existing Web RA installation directory:			
C:\WebRA-Deployment\Aasim\2.9\WebRA-v2.9-Win64-26Dec2023	Browse		
Defense and invites a second between being below before a fills Web DA database			
Before continuing - ensure that you have taken backup of the Web RA database			
	Next	Can	cel

4.5.7. Click the **Next** button to select **Web RA Modules**. The already installed modules will be look like disabled fields e.g. Admin, Web and API modules are already installed.

eb RA Modules					
Fully Qualified Domain Name:	WebRA-RC1.ascerti	ia.com.pk			
 Fully qualified domain name wil setting for existing instances. 	l be set for the all insta	ances in system settings	. It will not up	date the syste	em
Web RA Admin					
Website Name	admin	Port:	443		
Web RA Web					
Website Name	web	Port:	81		
Web RA API (RESTful Web Servio	es)				
Website Name	api	Port:	82		

4.5.8. Click **Next** and Select **Device Modules** to install the required features if not installed already. For each selected application, provide the web application name and port. The modules which are not previously installed will look like editable fields. Click **Next** to proceed.



		-	- 0	×
🗧 者 Web RA Installer				
Web RA Device Modules				
Veb RA Device				
HTTP (Install SCEP)				
Website Name: device	Port:	84		
HTTPS (Install CMP, ACME, EST)				
Website Name (CMP, ACME, EST): device	Port:	85		
Client Authentication (Install EST)				
Website Name (EST): ssldevice	Port:	86		
		Next	t C	ancel

4.5.9. Select **Windows Enrolment** if not already installed. For each selected application, provide the web application name and port. Then click **Next**.

☑ Windows Enrolment				
Windows Integrated Authentication				
Certificate Enrolment Policy Service (CEP) windowsIntegratedCepService	Port:	87	
Certificat Enrolement Service (CES)	windowsIntegratedCesService	Port:	88	
UserName / Password Authentication				
Certificate Enrolment Policy Service (CEP) windowsUserNamePasswordCepService	Port:	89	
Certificat Enrolement Service (CES)	windowsUserNamePasswordCesService	Port:	90	
Client Authentication				
Certificate Enrolment Policy Service (CEP) windowsSsICepService	Port:	91	
Certificat Enrolement Service (CES)	windowsSslCesService	Port:	92	

This screen shows a list of all ADSS **Web RA modules**. Components that are already installed are displayed but **greyed** out, while any ADSS Web RA module(s) that have not been installed previously can be selected for installation during the upgrade.



4.5.10. Click the Next button to see the Upgrade Summary.

	—		\times
🗧 者 Web RA Installer			
Web RA Upgrade Summary			
Existing Installation			
Installation Path: C:\WebRA-Deployment\Aasim\2.9\WebRA-v2.9-Win64-26Dec2023			
Web RA Version: 292			
Web RA Database Version: 292			
Machine Name / Port: 192.168.2.64 / 1433			
Database Name: Web RA			
New Installation			
Installation Path: C:\WebRA-Deployment\Aasim\2.9\WebRA-v2.9-Win64-26Dec2023			
Web RA Version: 292			
Web RA Database Version: 292			
Machine Name / Port: 192.168.2.64 / 1433			
Database Name: Web RA			
[Next	Car	icel

4.5.11. Click the **Next** button to start the upgrade progress.

Web RA Installer Upgrade Progress Changing website paths to the new Web RA directory Creating website for Web RA Device: device Creating HTTPS Binding for Web RA Device: device Creating windows integrated CEP service site : windowsIntegratedCepService Creating windows integrated CEP service site : windowsIntegratedCesService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsSslCesService Updating System settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure Web RA upgrade completed!	
Changing website paths to the new Web RA directory Creating website for Web RA Device: device Creating HTTPS Binding for Web RA Device: device Creating windows integrated CEP service site : windowsIntegratedCepService Creating windows integrated CEP service site : windowsIntegratedCesService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Preating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Preating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Preating SSL windows CES service website for Web RA window enrolment services : windowsSslCesService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure Migrating the certificate to the new structure	
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Creating website for Web RA Device: device Creating HTTPS Binding for Web RA Device: device Creating website for Web RA SSL Device: ssldevice Creating windows integrated CEP service site : windowsIntegratedCepService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure to the new structure Migrating the certificate to the new structure to the new structure Migrating the certificate to the new structure to the n	_
Creating website for Web RA Device: device Creating HTTPS Binding for Web RA Device: device Creating website for Web RA SSL Device: ssldevice Creating windows integrated CEP service site : windowsIntegratedCepService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure to the new structure Migrating the certificate to the new structure to the new structure Migrating the certificate to the new structure to the n	
Creating website for Web RA Device: device Creating HTTPS Binding for Web RA Device: device Creating website for Web RA SSL Device: ssldevice Creating windows integrated CEP service site : windowsIntegratedCepService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure to the new structure Migrating the certificate to the new structure to the new structure Migrating the certificate to the new structure to the n	
Creating website for Web RA SSL Device: ssldevice Creating windows integrated CEP service site : windowsIntegratedCepService Creating windows integrated CES service site : windowsIntegratedCesService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
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Creating windows integrated CES service site : windowsIntegratedCesService Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
Creating UserName/Password windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrolment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsIntegratedCepService Updating SSL windows CES service website for Web RA window enrolment services : windowsSsICesService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
windowsIntegratedCepService Creating UserName/Password windows CES service website for Web RA window enrorment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsSsICesService Updating System settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
Creating UserName/Password windows CES service website for Web RA window enrorment services : windowsIntegratedCesService Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsSslCesService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
Creating SSL windows CEP service website for Web RA window enrolment services : windowslntegratedCepService Creating SSL windows CES service website for Web RA window enrolment services : windowsSslCesService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
Creating SSL windows CES service website for Web RA window enrolment services : windowsSslCesService Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
Updating system settings Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
Please wait while migrating the certificate to the new structure Migrating the certificate to the new structure completed	
Web RA upgrade completed!	

- **4.5.12.** Click the **Finish** button to complete the ADSS Web RA upgrade process. Newly added modules will be deployed in IIS.
- It is recommended to restart IIS after upgrade installation of ADSS Web RA.



4.6 Changing Database Credentials for an Existing Installation

Database credentials stored by ADSS Web RA are encrypted for security purpose. If you need to make changes in your database server configurations, then these changes must be reflected in the ADSS Web RA installation for the signing operations to continue.

ADSS Web RA provides an option through the installer to update the following types of database related information:

- Database username and password.
- **Database name** and/or **server** (in case if database is restored from production database otherwise you need to install with existing database option).
- Authentication types (from SQL Server to Windows authentication and vice versa)

4.6.1. Follow the installation wizard, and select the "Change database credentials" option, when the Installation Type screen is shown:

	-		×
🗧 🤧 Web RA Installer			
Installation Type			
○ Install Web RA for the first time			
 Install Web RA as another instance within a load-balanced configuration 			
Install Web RA with an existing database			
 Upgrade an existing Web RA instance to the latest one 			
 Change database credentials 			
O Uninstall Web RA			
-			
[Next	Can	icel

4.6.1. Click the Next button to show the License Agreement.



License Agreement		
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT		•
IMPORTANT - PLEASE READ CAREFULLY:		
1.0 ACCEPTANCE.		
Ascertia Limited ("Ascertia") is willing to license this software (the Software) and documentation (together the	
Product) in this installation package to you as an individual or as an authorised representative of the		
legal entity that will be using the Software only on condition that you accept all of the terms of thi agreement. You or the company or legal entity (referred to as the Licensee) can accept the terms of terms of the terms of		
Agreement by clicking on the "I agree" button below, and proceed with the installation. To reject	the terms of	
this License Agreement, click on the "I disagree" button below and exit the installation process and further use of the software.	d make no	
further use of the software.		
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Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may use		
without charge until the evaluation limits are reached or for a maximum of 3 months from the day		
install the Software. After this you must pay the appropriate license fee to continue to use the Soft	tware. To pay	~

4.6.1. Click the **I Agree** button to proceed. The following screen for **Database Configurations** will be displayed.

Database	1 Colores Torres		
Database Managemer Microsoft SQL			
	Server		
Installation Type	Advanced		
Database Configuration	ons		
Database Server:	Production-Server		
Port:	1433		
Database Name:	WebRA	7	
	Use windows authentication		
Username:	sa		
Password:	********]	
	L	_	

4.6.1. Click the Next button to update the database configurations.



- 🔏 Web RA Installer	_		×
Installation Progress			
Changing database credentials process started Web RA Admin database credentials changed Web RA Web database credentials changed Web RA Device database credentials changed Web RA SSL Device database credentials changed Web RA Windows Integrated CEP service database credentials changed Web RA Windows Integrated CES service database credentials changed Web RA Windows UserName/Password CEP service database credentials changed Web RA Windows UserName/Password CES service database credentials changed Web RA Windows UserName/Password CES service database credentials changed Web RA Windows SSL CES service database credentials changed Changing database credentials process completed		~	
		Fin	ish

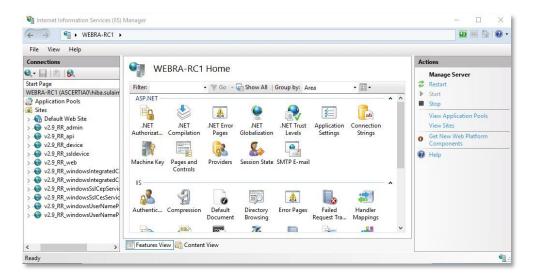
4.6.1. Click the Finish button to update the database configurations.

4.7 Regular Release Installation

Note: If you are upgrading from v2.9 to v2.9.6, ensure that your v2.9 deployment is functioning properly by accessing it in a browser.

Follow the instructions below to install ADSS Web RA's regular release. Before starting the installation make sure that you have taken a backup of the Web RA database and have stopped the IIS Server.

To stop the IIS Server, launch the IIS Server and click Stop under the Manage Server action.





4.7.1 Launch the installer by right-clicking the file name [Web RA Regular Release Installation Directory]/setup/install.bat and select Run as administrator. Follow the installation wizard as described below:

The Welcome screen will appear:

🔏 Web RA Installer	
Welcome to Web RA	
Web RA is a central application for key management and certificate generation in th register users to offer them different sets of certification services. It can also register RAS/SAM services as well as push users to Web RA. All of them are powerful applica documents using these keys. Web RA is ideal for the organizations that are looking t and distribution process by implementing strong vetting for the issuance of these co	users to ADSS CSP services, ADSS tions to create certificates and sign the to centrally control the certificates creati
Web RA consists of the following modules:	
 Web RA Admin Web RA Desktop Web Web RA API (RESTful Web Services) Web RA Device Web RA Windows Enrolment We strongly recommend you to follow the installation instructions provided in Web 	RA Installation Guide
U.S. Patent No. 7,360,079	
	Next Cance

4.7.2 Click the Next button to continue. The system requirements screen will appear next to validate if all the required prerequisites are installed.

Check	ing System Requirements	
ASP .Ne Microso	oft .NET Framework v4.8 or above et Core v8.0.0 or above oft Internet Information Services (IIS) v10.0 or above write in Internet Information Services (IIS)	Success Success Success Success
	et Core Module in Internet Information Services (IIS) runtime support	Success



4.7.3 Click the Next button to show the Installation Type.

	-		×
🗧 🧞 Web RA Installer			
Installation Type			
Install Web RA for the first time			
Install Web RA as another instance within a load-balanced configuration			
Install Web RA with an existing database			
Upgrade an existing Web RA instance to the latest one			
Apply release v2.9.4 to an existing Web RA instance			
○ Revert to previous release			
Change database credentials			
O Uninstall Web RA			
	Next	Can	cel

4.7.4 Click Next button to view and accept the License Agreement.

icense Agreement	
incluse / groune inclusion	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT	^
IMPORTANT - PLEASE READ CAREFULLY: v2.9.1	
1.0 ACCEPTANCE.	
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BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO BE BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, DO NOT INSTALL OR USE THE ASCERTIA SOFTWARE.	
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Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may use the Software without charge until the evaluation limits are reached or for a maximum of 3 months from the day that you install the Software. After this you must pay the appropriate license fee to continue to use the Software. To pay the license found evaluation use non-the software to an which day that you have been and evaluation when the software to an which day the software. To pay the license for and evaluation when the software to an which days are to evaluate the software.	~



4.7.5 Click the I Agree button to proceed to the Read Me.

README	
Note: Consult Web RA installation guide if you want to install this version as fresh instance.	^
ADSS Web RA Server 2.9.1 supports	
ADSS Web RA Server now supports the domain names (DNS) configuration on enterprise level for domain verification of TLS/SSL certificates. Now, operators and users can create TLS/SSL certificates with pre-configured domain names.	
ADSS Web RA Server now allows an operator to set request notes against each step in the certificate generation process. It can be managed by an enterprise and these notes will be applicable to all types of certificate requests.	
ADSS Web RA Server introduces the latest enhancement to our Automated Certificate Management Environment ACME) the ACME Renewal Information (ARI) Extension. With ARI, managing certificate renewal and information s easier.	
ADSS Web RA Server now allows users to register via citizen ID as the unique identifier. User registration also supports auto-registration of Virtual ID and SigningHub account, certificate generation and auto-provisioning Virtual ID certificate to SigningHub.	
n the ADSS Web RA Server, users now have the ability to generate certificates for various purposes using Desktop Signing profiles. Additionally, administrators can manage certificate provisioning through enterprise roles.	~

4.7.6 Click the Next button to provide the existing Web RA directory addresses:

the web BA Conference	
xisting Web RA Configurations	
Browse the existing Web RA installation directory:	
C:\WebRA\Installer-RR\WebRA-v2.9-Win64-26Dec2023	Browse
Neb RA release will be applied to this directory.	
Browse the backup Web RA directory:	
C:\WebRA\Installer-RR\WebRA-v2.9-Win64-26Dec2023\Backup\Pre-Patch_v2.9.1_RR-29Jan2024	Browse
Please ensure read/write permissions to the selected backup directory.	
Before continuing - ensure that you have taken backup of the Web RA database	

Click the Browse button against the existing Web RA installation directory. Then click the Browse button against the backup Web RA directory, to browse to the addresses for the respective directories:

By default, when the existing Web RA installation directory address is selected, the installer will automatically create a backup Web RA folder and select it as backup directory. However, if the user wants to change the backup directory, they can click "Browse" and manually select the backup directory.

Click the Yes button to confirm that you have taken a backup of the database and have stopped the IIS before proceeding with the installation:

Browse the existing We	o RA installation directory:	
C:\WebRA\Installer-RR	\WebRA-v2.9-Win64-26Dec2023	Browse
Web RA release will be	applied to this directory.	8
Browse the backup We	Web RA Installer	1
C:\WebRA\Installer-RF		Browse
Please ensure read/writ	Please confirm that you have taken a backup of the database and have stopped IIS before proceeding with the installation	
	Yes No	



4.7.7 Click the Finish button to complete the installation process.

Release Progre		
Creating a backup	itch scripts on database 'v2.9-RR-367' of the existing Web RA installation directory 2.9.1 files to path: C:\WebRA\Installer-RR\WebRA-v2.9-Win64-26Dec2023 plied successfully!	^



4.8 Uninstalling Regular Release

Follow the instructions below to uninstall ADSS Web RA's regular release. Before starting the uninstallation make sure that you have taken a backup of the Web RA database and have stopped the IIS Server.

To stop the IIS Server, launch the IIS Server and click Stop under the Manage Server action.

File View Help	IR ▶ Sites ▶ 1	14034-admin	•						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
onnections	1403	34-admir	Home					Ac	tions Explore
Start Page ▲ Start Page ▲ ▲ Application Pools ▲ Application Pools ▲ Application Pools ▲ ■ ▲ # # # # # # # # # # <td< th=""><th></th><th>Compression MIME Types</th><th>Default Document Modules</th><th>Show All Directory Browsing Output Caching</th><th>Group by: Ar</th><th>Handler SSL Settings</th><th>URL Rewrite</th><th>¢ ></th><th>Edit Permissions Edit Site Bindings Basic Settings View Applications View Virtual Directories anage Website Restart Start Start Stop Browse Website Browse *:443 (https) Advanced Settings HSTS</th></td<>		Compression MIME Types	Default Document Modules	Show All Directory Browsing Output Caching	Group by: Ar	Handler SSL Settings	URL Rewrite	¢ >	Edit Permissions Edit Site Bindings Basic Settings View Applications View Virtual Directories anage Website Restart Start Start Stop Browse Website Browse *:443 (https) Advanced Settings HSTS

4.8.1 Launch the installer by right-clicking the file name [Web RA Regular Release Installation Directory]/setup/install.bat and select Run as administrator. Follow the installation wizard as described below:

The Welcome screen will appear:

🔏 Web RA Insta	ller						
Welcome to	Web RA						
Web RA is a cen	ral application fo	r key managemen	t and certificate ge	neration in the Asce	rtia product suit	e. Web	RA is us
				also register users t			
				verful applications t			
				are looking to cent		certifica	ates crea
and distribution	process by imple	menting strong ve	tting for the issuan	ce of these certifica	tes.		
Web RA consists	of the following	modules:					
- Web RA Admir	1						
- Web RA Deskt	op Web						
	ESTful Web Servic	es)					
- Web RA Device							
- Web RA Winde	ws Enrolment						
We strongly rec	ommend you to f	ollow the installati	on instructions pro	vided in Web RA In:	stallation Guide		
U.S. Patent No	7,360,079						
					-		-



4.8.2 Click the Next button to continue. The system requirements screen will appear next to validate if all the required prerequisites are installed.

5
,

4.8.3 Click the Next button to show the Revert option.

	-		×
← 🔏 Web RA Installer			
Installation Type			
Install Web RA for the first time			
 Install Web RA as another instance within a load-balanced configuration 			
 Install Web RA with an existing database 			
 Upgrade an existing Web RA instance to the latest one 			
Apply release v2.9.2 to an existing Web RA instance			
Revert to previous release			
Change database credentials			
O Uninstall Web RA			
	Next	Can	icel



4.8.4 Click Next button to view and accept the License Agreement.

icense Agreement	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT	^
IMPORTANT - PLEASE READ CAREFULLY:	
1.0 ACCEPTANCE.	
Ascertia Limited ("Ascertia") is willing to license this software (the Software) and documentation (together the	e
Product) in this installation package to you as an individual or as an authorised representative of the company	
legal entity that will be using the Software only on condition that you accept all of the terms of this license	
agreement. You or the company or legal entity (referred to as the Licensee) can accept the terms of this Licens	
Agreement by clicking on the "I agree" button below, and proceed with the installation. To reject the terms of this License Agreement, click on the "I disagree" button below and exit the installation process and make no	
further use of the software.	
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO BE	
BY INSTALLING AND USING THIS ASCENTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO BE BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, DO	2
NOT INSTALL OR USE THE ASCERTIA SOFTWARE.	
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2.0 LICENSE	
Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may use the Software	e
without charge until the evaluation limits are reached or for a maximum of 3 months from the day that you	
install the Software. After this you must pay the appropriate license fee to continue to use the Software. To pa	ay 🔒

4.8.5 Click the I Agree button to proceed to the Read Me.

	-	×
🐍 Web RA Installer		
README		
Instructions		_
		 :=
* Verify that the database backup for version 2.9.2 has been successfully created.		
* Ensure that the database is reverted to version 2.9.1. * Ensure that the 2.9.1 release is intact.		
* Reverting to version 2.9.1 will result in the removal of all modifications implemented in the 2	.9.2 release.	
	Next	Cancel



4.8.6 Click the Next button to provide:

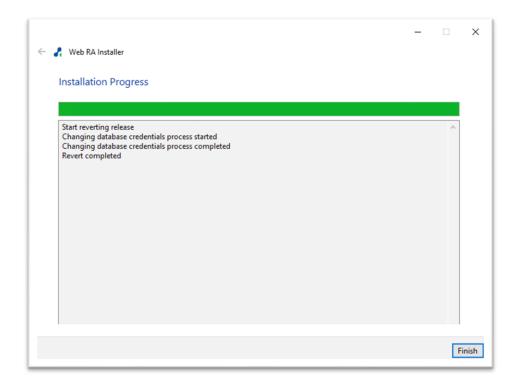
- 1. Browse the existing Web RA installation directory
- 2. Previous release backup directory will be set automatically. You also have the option to browse and select your own path.

	-	
Veb RA Installer		
Previous Web RA Directory		
Previous web its Directory		
Browse the existing Web RA installation directory:		
C:\Deployment\17may\WebRA-v2.9-Win64-26Dec2023	Browse]
Browse previous release backup directory:		
C:\Deployment\17may\WebRA-v2.9-Win64-26Dec2023\backup\Pre-WebRA-v2.9.1-RR-Win64-25	Browse]
	_	
	Next	Cano

4.8.7 Click next to view database details:

– Database Manageme	nt System Type		
Microsoft SQ			
Installation Type			
Basic	○ Advanced		
Database Configurati	ons		
Database Server:	192.168.2.64]	
Port:	1433		
Database Name:	v2.9.1]	
	Use windows authentication	-	
Username:	sa]	
Password:	*****]	

4.8.8 Click the Finish button to complete the installation process.



4.9 ADSS Web RA Uninstallation

Though we will not be pleased to let you go, but sometimes we have to say goodbye. You may uninstall ADSS Web RA Installer anytime.

4.9.1 Right-click on the [ADSS Web RA Directory]/setup/install file and click Run as administrator.

4.9.2 Follow the installation wizard until the Installation Type screen is shown.



	-		×
🗧 🤧 Web RA Installer			
Installation Type			
O Install Web RA for the first time			
Install Web RA as another instance within a load-balanced configuration			
Install Web RA with an existing database			
O Upgrade an existing Web RA instance to the latest one			
Change database credentials			
Uninstall Web RA			
	Next	: (Cancel

Select "Uninstall Web RA" to remove all websites from IIS mapped and this directory.

4.9.3 Click the Next button to proceed further. The following screen is shown.

	-		×
🗧 🔏 Web RA Installer			
Uninstallation Summary			
The following modules will be uninstalled:			
- Web RA Admin - Web RA Desktop Web - Web RA API (RESTful Web Services) - Web RA Device			
- Web KA Device - Web RA SSL Device - Web RA Windows Enrolment Services			
	Next	Car	ncel

4.9.4 Click the Next button to proceed with the uninstallation process.

Uninstallation Progress	
on instantion regress	
Uninstallation process started Uninstalling Web RA Admin module Uninstalling Web RA Web module Uninstalling Web RA Web Services API module Uninstalling Web RA Device module Uninstalling Web RA SSL Device module Uninstallation process completed	I
	~

4.9.5 Click the Finish button to complete the process.



This procedure does not remove the system database and its respective contents. You need to remove database manually.



5 ADSS Web RA Installation on Linux System

5.1 Prerequisites for Linux Installation

5.1.1 Install and Setup .Net Runtime 9

Source: Install .NET on RHEL and CentOS Stream - .NET | Microsoft Learn

The ASP.NET Core Runtime allows you to run .Net applications that do not include the runtime. The following command installs the ASP.NET Core Runtime, which is the most compatible runtime for .NET.

Installation

In your terminal, run the following command:

Bash: sudo dnf install aspnetcore-runtime-9.0

Verify Installation by running the following command:

Bash: dotnet --info

5.1.2 Install and Setup MSSQL Server 2022

Source: RHEL: Install SQL Server on Linux - SQL Server | Microsoft Learn

Install SQL Server (RHEL: Install SQL Server on Linux - SQL Server | Microsoft Learn)

To configure SQL Server on RHEL 9, run the following commands in the terminal to install the mssql-server package:

Bash: sudo curl -o /etc/yum.repos.d/mssql-server.repo
https://packages.microsoft.com/config/rhel/9/mssql-server-2022.repo

Download the SQL Server 2022 (16.x) Red Hat 9 repository configuration file:

Bash: sudo curl -o /etc/yum.repos.d/mssql-server.repo
https://packages.microsoft.com/config/rhel/9/mssql-server-2022.repo

• Run the following command to install SQL Server:

Bash: sudo yum install -y mssql-server

• After the package installation is complete, run mssql-conf setup using its full path and follow the prompts to set the SA password and select your edition. The following SQL Server editions are available under a free license: Evaluation, Developer, and Express.

```
Bash: sudo /opt/mssql/bin/mssql-conf setup
```

• Once the configuration is complete, verify that the service is running:

Bash: systemctl status mssql-server



 To allow remote connections, open the SQL Server port on the RHEL firewall. The default SQL Server port is TCP 1433. If you're using FirewallD for your firewall, you can use the following commands:

```
Bash: sudo firewall-cmd --zone=public --add-port=1433/tcp --permanent
Bash: sudo firewall-cmd -reload
```

At this point, the SQL Server is running on your RHEL machine and is ready for use!

5.1.3 Install and Setup Nginx

Source: nginx: Linux packages

• First, start by ensuring your system is up-to-date.

Bash: sudo dnf clean all Bash: sudo dnf update Bash: sudo dnf groupinstall "Development Tools"

• Installing Nginx on AlmaLinux 9.

By default, Nginx is available on the AlmaLinux 9 base repository. Simply install the Nginx package by using the dnf command:

Bash: sudo dnf install nginx

 After the installation is complete, start the service of the Nginx server. Then, enable it so that it starts itself automatically with the system reboot:

Bash: sudo systemctl restart nginx Bash: sudo systemctl status nginx Bash: sudo systemctl enable nginx

• Configure Firewall.

Bash: sudo firewall-cmd --permanent --add-service=http Bash: sudo firewall-cmd --permanent --add-service=https Bash: sudo firewall-cmd --reload

• Accessing Nginx Web Interface

i Once the installation is successful, verify that the webserver is running and accessible by entering your server's IP address in a browser: http://your-server-ip-address. If you see this page, it means that your Nginx web server is correctly installed and is running on AlmaLinux 9.



5.2 Pre-Installation Steps

5.2.1 Access the Root Directory

On a Linux machine, the **root directory** (/) is the highest-level directory that contains all system files and user directories.

5.2.2 Locate the /var Folder

- The /var directory is used to store variable data such as logs, cache, and web files.
- Navigate to this directory inside the root folder (/var).

5.2.3 Check for the www Folder

- Inside /var, check for the **www** folder.
- Some Linux distributions automatically create this folder, but in some cases, you might need to create it manually.

If the www folder is not present:

- Create a new www folder inside /var.
- Ensure appropriate permissions are set so that the installation can proceed without issues.

5.2.4 Place the Installation Package

• Copy the extracted WebRA installation package into the /var/www/ directory.

5.2.5 Access the Installation Folder

- In the extracted package, navigate to the LinuxFresh folder.
- Then, go to /var/www/LinuxFresh/setup/bin/ to access the install.json file.
- Each parameter in the install.json file must be correctly configured before proceeding with the installation.

5.2.6 Set Execution Permissions for the Installation Script

Before starting the installation, the install.sh file must have execution permissions enabled.

Name	Size	Changed	Rights	Owner
t .		3/11/2025 1:06:44 PM	rwxr-sr-x	root
hin hin		3/11/2025 1:04:26 PM	rwxr-sr-x	root
cert-linting		3/11/2025 1:04:26 PM	rwxr-sr-x	root
certs		3/11/2025 1:04:28 PM	rwxr-sr-x	root
db-scripts		3/11/2025 1:35:49 PM	rwxr-sr-x	root
executable		3/11/2025 1:05:01 PM	rwxr-sr-x	root
license		3/11/2025 1:05:01 PM	rwxr-sr-x	root
🔄 logo		3/11/2025 1:05:01 PM	rwxr-s	root
hird-party		3/11/2025 1:05:02 PM	rwxr-sr-x	root
install.log	5 KB	3/11/2025 1:41:42 PM	rw-rr	root
🚸 install.sh	1 KB	3/11/2025 1:34:43 PM	rwsrwsrwt	root

To grant execution permissions:

- Locate the install.sh file inside /var/www/LinuxFresh/setup/.
- Right-click the file and select Properties.
- Go to the Permissions section.
- Grant permissions and click Ok.

nstall.bat Prop	erties	?	×
Common Che	cksum		
-	install.bat		
Location:	/var/www/LinuxFresh/setup		
Size:	54 B		
Group:	root [0]		
Owner:	root [0] ~		
Permissions:		☑ Set UID ☑ Set GID ☑ Sticky bit	
	OK Cancel	Help	

5.3 Configuring Installation Parameters in install.json file

The install.json file contains all the required settings for the WebRA installation. The operator must define these configurations correctly before proceeding with the installation. The installation process reads this file to determine how the setup should be performed.

Each parameter in install.json must be configured according to your system requirements. The following sections explain each parameter in detail:

5.3.1 Set Agreement Parameter

- The LicenseAgreement parameter must be set to true if you want to include an agreement confirmation step in the installation process. This confirms acceptance of Ascertia's licensing terms and conditions.
- Possible values: true or false.
- If set to false, the installation will proceed without an explicit agreement confirmation.

```
{
    "Agreement": {
        "LicenseAgreement": true,
        "comment": "possible values are TRUE/FALSE"
    },
```

5.3.2 Installation Modes

Defines the type of installation to be performed. Choosing the correct mode is essential for a successful setup.

Possible values:

- **FIRST_TIME**: A fresh installation of WebRA.
- LOAD_BALANCE: Adds a new WebRA node to an existing setup.
- **UPGRADE**: Upgrades an existing WebRA installation.
- **EXISTING_DATABASE**: Connects to an already configured database.
- **REGULAR_RELEASE**: Installs a regular update package.
- UNINSTALL_REGULAR_RELEASE: Removes a previously installed update.
- CHANGE_DB_CREDENTIALS: Updates database credentials.
- UNINSTALL: Completely removes WebRA and its configurations.



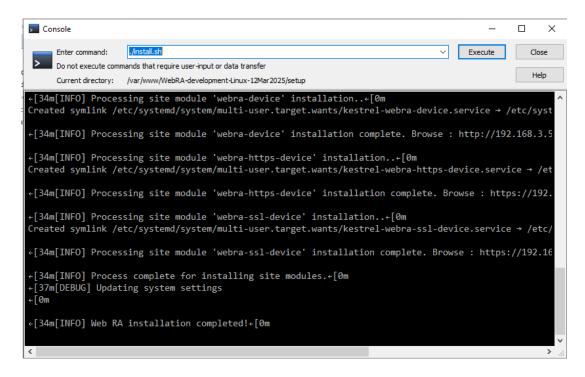
5.3.2.1 First Time Installation

When installing ADSS WebRA for the first time, set the "Type" value under "InstallationMode" to:

```
},
"InstallationMode": {
    "Type": "FIRST TIME",
    "comment": "possible values are
FIRST_TIME/LOAD_BALANCE/UPGRADE/EXISTING_DATABASE/REGULAR_RELEASE/UNINSTALL_REGULAR_RELEASE/CHANGE_DB_CREDENTIALS/UNINSTALL"
},
```

After setting the Type, save the file and close it. Then navigate to **the /var/www/LinuxFresh/setup/** folder and run the install.sh script using the following command

sudo ./install.sh



Note: For a FIRST_TIME installation, a new database is required. Ensure that no existing database is used to prevent conflicts with DB versions.

5.3.2.2 Installing in Load Balanced Mode

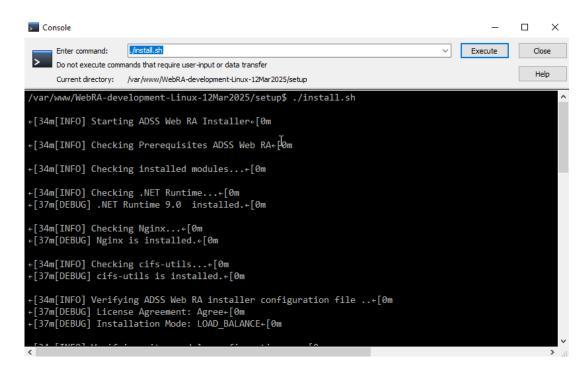
When installing ADSS WebRA in a load-balance environment, set the "Type" value under "InstallationMode" to:

```
},
"InstallationMode": {
    "Type": "LOAD_BALANCE",
    "comment": "possible values are
FIRST_TIME/LOAD_BALANCE/UPGRADE/EXISTING_DATABASE/REGULAR_RELEASE/UNINSTALL_REGULAR_RELEASE/CHANGE_DB_CREDENTIALS/UNINSTALL"
},
```



After setting the Type, save the file and close it. Then navigate to **the /var/www/LinuxFresh/setup/** folder and run the **/install.sh** script using the following command:

sudo ./install.sh



5.3.2.3 Installing WebRA with an Existing Database

To install WebRA while connecting it to an already configured database, set the Type value under "InstallationMode" to:

```
},
"InstallationMode": {
    "Type": "EXISTING_DATABASE",
    "comment": "possible values are
FIRST_TIME/LOAD_BALANCE/UPGRADE/EXISTING_DATABASE/REGULAR_RELEASE/UNINSTALL_REGULAR_RELEASE/CHANGE_DB_CREDENTIALS/UNINSTALL"
},
```

After setting the Type, save the file and close it. Then navigate to **the /var/www/LinuxFresh/setup/** folder and run the **/install.sh** script using the following command:

sudo ./install.sh



Console \times ./install.sh Execute Close Enter command: \sim > Do not execute commands that require user-input or data transfer Help Current directory: /var/www/existingDB/setup ←[34m[INFO] Checking installed modules...<[0m</p> -[34m[INFO] Checking .NET Runtime...+[0m <[37m[DEBUG] .NET Runtime 9.0 installed.<[0m -[34m[INFO] Checking Nginx...+[0m ←[37m[DEBUG] Nginx is installed.←[0m ←[34m[INFO] Checking cifs-utils...+[0m ←[37m[DEBUG] cifs-utils is installed.<[0m</pre> (34m[INF0] Verifying ADSS Web RA installer configuration file ...(0m ←[37m[DEBUG] License Agreement: Agree<[0m</pre> <[37m[DEBUG] Installation Mode: EXISTING_DATABASE<[0m +[34m[INF0] Running scripts on database 'linux_ED'<[0m</pre> [37m[DEBUG] Executing database scripting to upgrade latest version<[0m</pre> +[37m[DEBUG] Executing 'v296' upgrade scripts on database 'linux_ED'.Please wait for a while * ⊷[0m [37m[DEBUG] Executing 'v296' upgrade scripts on database 'linux_ED' .Please wait for a while * Changing Database Credentials in WebRA 5.3.2.4

To update the database connection details without modifying other configurations, set the Type value under "InstallationMode" to "CHANGE_DB_CREDENTIALS", and update the following parameters under the Database Configuration section:

- DatabaseType
- MachineName
- Port
- Authentication
- UserId
- Password

Save and close the file install.json file after making the changes.



Then navigate to **the /var/www/LinuxFresh/setup/** folder and run the **/install.sh** script using the following command:

sudo ./install.sh

```
Console
                                                                                                                                                   \times
                             ./install.sh
                                                                                                                           \sim
                                                                                                                                Execute
        Enter command:
 >
      Do not execute commands that require user-input or data transfer
                                                                                                                                                      Help
        Current directory: /var/www/existingDB/setup
 -[34m[INFO] Checking Prerequisites ADSS Web RA+[0m
€[34m[INF0] Checking installed modules...<[0m]</p>
 -[34m[INFO] Checking .NET Runtime...⊹[0m
-[37m[DEBUG] .NET Runtime 9.0 installed.⊹[0m
←[34m[INFO] Checking Nginx...+[0m
←[37m[DEBUG] Nginx is installed.+[0m
 [34m[INFO] Checking cifs-utils...+[0m
←[37m[DEBUG] cifs-utils is installed.(0m
+[34m[INFO] Verifying ADSS Web RA installer configuration file ..+[0m
+[37m[DEBUG] License Agreement: Agree+[0m
+[37m[DEBUG] Installation Mode: CHANGE_DB_CREDENTIALS+[0m
 [34m[INFO] Changing database credentials process started+[0m
[37m[DEBUG] Web RA ADMIN database credentials_changed+[0m
```

5.3.3 Existing Installation Parameter

BackupDirectory: Specifies where to store backup files before upgrading or uninstalling WebRA. If left empty, no backup is created, which may lead to data loss.



5.3.4 Regular Installation Parameter

- **ExistingWebRAPath**: Specifies the file path where the currently installed WebRA instance is located.
- RegularBackupPath: Directory where a backup of the current WebRA instance will be stored before installation.

```
},
"ExistingInstallation": {
    "BackupDirectory": ""
},
"RegularInstallation": {
    "ExistingWebRAPath": "",
    "RegularBackupPath": ""
```



5.3.5 Sample Data

- If set to **True**, the installation will include sample data to help with testing and initial configuration.
- If set to **False**, the installation will proceed without adding sample data and you will have to create everything by scratch.

5.3.5.1 Database Configuration

• DatabaseType:

Specifies the type of database WebRA will use. Currently, only MSSQL is supported.

ConfigurationType:

- TYPICAL: Uses default settings for database configuration, requiring minimal user input.
- ADVANCED: Allows manual customization of the database connection settings.

Note: You can either use Typical or Advanced Database Configuration, but not both simultaneously.

5.3.5.1.1 Typical Database Configuration

- **MachineName**: The hostname or IP address of the database server where WebRA's database will be hosted.
- Port: The port used for database connections (e.g., 1433 for MSSQL by default).
- Authentication: Defines how WebRA connects to the database.
 - SERVER_AUTH: Requires entering a username and password to connect to the database.
 - **WINDOW_AUTH:** Uses Windows authentication, eliminating the need to manually enter credentials.
- DatabaseName: The name of the database WebRA will use.
- **UserId**: The username for database authentication.
- **Password**: The password for database authentication.

```
},
"SampleData": true,
"/"comment": "possible values are True or false",
"DatabaseConfiguration": {
    "DatabaseType": "",
    // "comment": "possible values are MSSQL",
    "ConfigurationType": {
        "Type": "",
        //"comment": "possible values are TYPICAL and ADVANCED",
        "TypicalDatabaseConfiguration": {
        "MachineName": "",
        "Authentication": "",
        //"comment": "possible Values are SERVER_AUTH, WINDOW_AUTH",
        "DatabaseName": "",
        "VuserId": "",
        "Password": ""
}
```



5.3.6 Advanced Database Configuration

Allows specifying a direct connection string for finer control over database connectivity.

• Example for SQL Authentication:

data source=[server];initial catalog=[database];user id=[user];password=[password]

• Example for Windows Authentication:

data source=[server];initial catalog=[database];trusted_connection=true

```
}
},
'AdvancedDatabaseConfiguration": {
// "connectionString": "windows Authentication",
    "comment": " Possible values are SQL Auhentication and windows Authentication"
    //SQL Authentication
    //data source=[server address];initial catalog=[database name];user
id=[user_id];password];MultipleActiveResultSets=True;Pooling=true;",
    // Windows Authentications
    //"RAEntities": "data source=[server address];initial catalog=[database
name];trusted_connection=true;MultipleActiveResultSets=True;Pooling=true;"
}
```

5.3.7 Custom Installation Parameter

Defines the modules to be installed and their respective configurations.

• FullyQualifiedDomainName: Specifies the full domain name of the server.

Each module has settings for site name, installation status, and ports.

- AdminModule:
 - Site name: admin
 - o Install: true
 - Port: "Port Number" (default HTTPS port)
 - Application Port: "Port Number"

• WebModule:

- o Site name: web
- Install: true
- Port: "Port Number"
- o Application Port: "Port Number"
- ApiModule:
 - Site name: api
 - Install: true
 - Port: "Port Number"
 - Application Port: "Port Number"
- DeviceModule (SCEP support):
 - Site name: device
 - Install: true
 - Port: "Port Number"
 - Application Port: "Port Number"
- **HTTPSDeviceModule** (Secure communication for SCEP, CMP, ACME, EST):
 - Site name: https-device
 - o Install: true
 - o Port: "Port Number"
 - o Application Port: "Port Number"



- **SSLDeviceModule** (EST on client authentication-based setup):
 - Site name: ssl-device
 - o Install: true
 - o Port: "Port Number"
 - o Application Port: "Port Number"

```
"FullyQaulifiedDomainName": "",
  "AdminModule": {
    "siteName": "admin",
    "install": true,
    "port":
    "applicationPort":
  "WebModule": {
"siteName": "web",
"install": true,
    "port":
    "applicationPort":
  "ApiModule": {
"siteName": "api",
    "install": true,
    "port": ,
    "applicationPort":
 },
 }.
  //SCEP
  "DeviceModule": {
"siteName": "device",
    "install": true,
    "port": 🚬 ,
```

```
"port": ,
"applicationPort":
},
//Install SCEP,CMP,ACME,EST
"HTTPSDeviceModule": {
"siteName": "https-device",
"install": true,
"port": ,
"applicationPort":
},
//Instal EST on client Authentications based
"SSLDeviceModule": {
"siteName": "ssl-device",
"install": true,
"port": ,
"applicationPort":
```

```
}
```

5.3.7.1 Port Usage Guidelines

- The same port number cannot be assigned to multiple modules. If a port is already in use, a different number must be selected for another module.
- In the application ports, if using a sequential series (e.g., **5001**, **5002**, **5003**), the next installation should use a different series (e.g., **4001**, **4002**, **4003**) to prevent conflicts.

Constraints

• Windows Enrolment and Active Directory are not supported in Linux deployment.



5.3.7.2 Allowing Ports on Ubuntu

If the Linux server is running Ubuntu, use the following command to allow a specific port:

sudo ufw allow <port>/tcp

For example, to allow port 81:

sudo ufw allow 81/tcp

To verify the firewall status:

sudo ufw status

5.3.7.3 Allowing Ports on AlmaLinux

If the server is running **AlmaLinux**, use the following command:

sudo firewall-cmd -permanent -add-port=<port>/tcp

For example, to allow port 443:

sudo firewall-cmd -permanent -add-port=443/tcp

After making changes, reload the firewall settings:

sudo firewall-cmd -reload

5.3.8 SMPT Configuration

Defines email settings for notifications:

- **Host**: SMTP server address (e.g., smtp.example.com).
- **Port**: SMTP connection port (e.g., 587 for TLS, 465 for SSL).
- FromAddress: Sender's email address.
- **Username** and **Password**: SMTP authentication credentials.
- **UseSsI**: Determines if SSL/TLS encryption is enabled.

Note: When SMTP settings are configured in the installation process, an SMTP connector is automatically created upon running the installer.

ADSS Web RA Installation Guide



```
// The hostname or IP address of the SMTP server (e.g.,
    "Host": "",
    // The email address that appears as the sender
"FromAddress": "",
    // Default subject line for the email
    "DefaultSubject": "
    // The default recipient email address
    "DefaultRecipient":
   // The username for authenticating with the SMTP server
"Username": "",
    // The password for authenticating with the SMTP server
    "Password": "
    // Indicates if authentication is required for the SMTP server
    "IsAuthenticationRequired": true,
    // Indicates if SSL/TLS should be used for the SMTP connection
    "UseSsl": true
 }
}
```

After configuring all necessary parameters in the install.json file, launch the /install.sh file to install ADSS WebRA with the required set of configurations. Before executing /install.sh, run the following commands:

```
dos2unix install.sh
cat -A install.sh
```

After running the above given commands, launch the /install.sh file by running the following command:

sudo ./install.sh

Note: Before running the install.sh file, ensure it has the necessary execution permissions. To do this, open the file properties and grant execution rights.

5.3.9 Uninstallation Process

To uninstall ADSS WebRA, update the install.json file by modifying the "Type" value under the "InstallationMode" parameter before running the uninstallation process. The following options determine the type of uninstallation:

5.3.9.1 Uninstalling a Simple Installation

In the install.json file, set the "Type" value under "InstallationMode" to:

```
},
"InstallationMode": {
    "Jype": "UNINSTALL",
    "comment": "possible values are
FIRST_TIME/LOAD_BALANCE/UPGRADE/EXISTING_DATABASE/REGULAR_RELEASE/UNINSTALL_REGULAR_RELEASE/CHANGE_DB_CREDENTIALS/UNINSTALL"
},
```

After setting the Type, save the file and close it. Then navigate to **the /var/www/LinuxFresh/setup/** folder and run the install.sh script using the following command

```
sudo ./install.sh
```



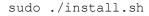
Console			-		×
Enter command:	, /install.sh	\sim	Execute	Clo	se
> Do not execute com	ands that require user-input or data transfer			He	alo
Current directory:	/var/www/Linuxfresh/setup			ne	ар
[34m[INFO] Checki					
[37m[DEBUG] Nginx	is installed.←[0m				
[34m[TNEO] Checki	ng cifs-utils↓[Om				
	utils is installed.<[Om				
	ing ADSS Web RA installer configuration file+[Om				
	se Agreement: Agree←[0m				
[37m[DEBUG] Insta	llation Mode: UNINSTALL+[0m				
[34m[TNEO] Uninst	alling all installed ADSS WebRA instances+[0m				
	talling instance 'webra-admin'[0m				
	talling instance 'webra-web'€[0m				
	talling instance 'webra-api'⊹[0m				
	talling instance 'webra-device'[0m				
	talling instance 'webra-https-device'←[0m				
[37m[DEb0G] Unins	talling instance 'webra-ssl-device'←[0m				
[34m[INFO] Uninst	alling of all installed ADSS WebRA instances complete!+[0m				

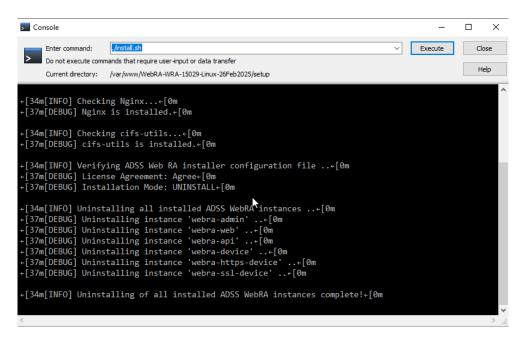
5.3.9.2 Uninstalling a Regular Release

To remove a previously installed regular release update modify the **install.json** file and set the Type under "InstallationMode" to:



After setting the Type, save the file and close it. Then navigate to **the /var/www/LinuxFresh/setup/** folder and run the install.sh script using the following command:







6 Appendix

6.1 Troubleshooting

6.1.1 If ADSS Web RA Admin module is installed on Windows 2012 R2, then the HTTP 403.16 error code may occur when you access the ADSS Web RA Admin console from web browser.

Follow these instructions to solve this issue:

a. Open registry and add the key:

KEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL

- b. Create a new key with Value Type: REG_DWORD (32-bit)
- c. Set Value Name: ClientAuthTrustMode
- d. Edit the field and set Value Data: 2

If you are interested to know more details about it, browse the Microsoft KB link: https://support.microsoft.com/en-us/kb/2464556.

6.1.2 If you receive the HTTP error code 500.19 whilst accessing Admin, Web or API then:

- a. Open IIS Management Console.
- b. Go to Application Pools.
- c. Select a site and click Advanced Setting.
- d. In General, make sure that Enable 32-Bit Applications is set to False.
- 6.1.3 If you cannot start ADSS Server from Windows Services panel on Azure, then make sure that you are not starting those services under Windows user that you have created while creating the Azure instance. You must create another Windows user with Administrative rights and start the services under that user.
- Upon deploying to the server, you must keep in mind that the firewall and ports are open so that user can access the application from outside.
 - In **Firewall > Outbound Rules**. Open the ports if you want to 80-90, 440-450.
- Make sure the Directory has IIS permissions where code files are published.

WebRA Properties ×	Permissions for WebRA	
General Sharing Security Previous Versions Customize	Security	
Object name: D:\WebRA Group or user names:	Object name: D:\WebRA	
Adthenticated Users SYSTEM Administrators (DOTNET-TAHSEEN/Administrators) & doministrators Users (DOTNET-TAHSEEN/Users)	Authenticated Users SvSTEM Administrators (DOTNET-TAHSEEN-Vadministrators) Susers Users (DOTNET-TAHSEEN-Valers)	
To change permissions, click Edit Permissions for Authenticated Users Allow Deny	Add Remove	
Full control	Permissions for Authenticated Users Select Users or Groups Full contro Modify Select this object type:	×
Read V Write V	Read & ex Users, Groups, or Built-in security principals List folder From this location:	Object Types
For special permissions or advanced settings, Advanced click Advanced.	Read DOTNET-TAHSEEN Enter the object names to select (examples);	Locations
OK Cancel Apply	12/14/2018	Check Names
WebRA	4/10/2020 10 Advanced OK	Cancel



• Add / Install the SSL Server certificate in Microsoft Management Console which will be imported to IIS so, connection between server and application can be established successfully.

	Certificate A	
aul Jos Jos ←	F Certificate Import Wizard	×
llar llar		
vin vin	Welcome to the Certificate Import Wizard	
ub-	This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.	
	A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.	
L	Store Location O Current User	
	To continue, click Next.	
	Sext Cance	I

• For API to work against all Verbs (GET,POST,DELETE,PUT etc) without **405** error, make sure WebDav Module remove against the API site. To do this click on "**API**" site in IIS ,select "**Modules**", find the "**WebDAVModule**" and remove it.

A					Actions
Modules					Add Managed Module
Use this feature to configure the r	ation and managed code module	that process requests made	to the Web server		Configure Native Modules
	and and managed code module	s one process requests mass	to the may perior.		Edit
Group by: No Grouping .					X Remove
Name	Code	Module Type	Entry Type	^	Revent To Parent
DirectoryListingModule	%windir%\System32\inetsrv\	Native	Inherited		View Ordered List.
DynamicCompressionModule	%windir%\System32\inetsrv\	Native	Inherited		
DynamiclpRestrictionModule	%windir%\System32\inetsrv\	Native	Inherited		😧 Help
FailedRequestsTracingModule	%windir%\System32\inetsrv\i	Native	Inherited		
FastCgiModule	%windir%\System32\inetsr/\i	Native	Inherited		
FileAuthorization	System.Web.Security.FileAuth	Managed	Inherited		
FormsAuthentication	System.Web.Security.FormsA	Managed	Inherited		
HttpCacheModule	%windir%\System32\inetsrv\	Native	Inherited		
HttpLoggingModule	%windir%\System32\inetsrv\l	Native	Inherited		
HttpRedirectionModule	%windir%\System32\inetsrv\r	Native	Inherited		
ISCertificateMappingAuthenti	%windir%\System32\inetsrv\	Native	Inherited		
IpRestrictionModule	%windir%\System32\inetsr/\i	Native	Inherited		
IsapiFilterModule	%windir%\System32\inetsrv/d	Native	Inherited		
IsapiModule	%windir%\System32\inetsrv\i	Native	Inherited		
OutputCache	System.Web.Caching.Output	Managed	Inherited		
Profile	System.Web.Profile.ProfileMo	Managed	Inherited		
ProtocolSupportModule	%windir%\System32\inetsrv\	Native	Inherited		
RequestFilteringModule	%windir%\System32\inetsrv\	Native	Inherited		
RewriteModule	%SystemRoot%\system32\in	Native	Inherited		
RoleManager	System.Web.Security.RoleMa	Managed	Inherited		
ScriptModule-4.0	System.Web.Handlers.Script	Managed	Inherited		
ServerSideIncludeModule	%windir%\System32\inetsr/\i	Native	Inherited		
ServiceModel	System.ServiceModel.Activati	Managed	Inherited		
ServiceModel-4.0	System.ServiceModel.Activati	Managed	Inherited		
Session	System.Web.SessionState.Ses	Managed	Inherited		
StaticCompressionModule	%windir%\System32\inetsrv\	Native	Inherited		
StaticFileModule	%windir%\System32\inetsrv\	Native	Inherited		
UrlAuthorization	System.Web.Security.UrlAuth	Managed	Inherited		
UrlAuthorizationModule	%windir%\System32\inetsrv\	Native	Inherited		
UrlMappingsModule	System.Web.UrlMappingsMo	Managed	Inherited		
UrlRoutingModule-4.0	System.Web.Routing.UrlRouti	Managed	Inherited		
WebDAWModule	%windir%\System32\inetsr/\	Native	Inherited]	
WebSocketModule	Swindir%/System32/inetsr//i	Native	Inherited		
WindowsAuthentication	System.Web.Security.Window	Managed	Inherited		
WindowsAuthenticationModule	%windir%\System32\inetsrv\	Native	Inherited		
				×	
Features View 💦 Content View	v				
Content of the second s					



Troubleshooting for Linux

Deployment Stops Unexpectedly

If the deployment process halts during execution, it may be due to Linux security settings preventing the installation from proceeding. To resolve this issue:

1. Temporarily disable Linux security enforcement by running the following command:

sudo setenforce 0

This forces the security module to be turned off.

2. Restart the Nginx service to ensure proper functionality:

systemctl restart nginx

• A Specific WebRA Service Is Not Running

If the deployment completes but a specific service (such as **Admin**, **Web**, or **API**) is not running, restart the affected service using the following command:

systemctl restart kestrel-webra-{service name}.service

Replace {service name} with the actual service name (e.g., admin, web, api).

• Installation Fails Due to Spaces in Folder Name

Issue:

The installation process fails or encounters errors if the folder name where the installation package is placed contains spaces.

Solution:

Ensure that the installation folder name does not contain spaces. Rename the folder using underscores (_) or remove spaces before proceeding with the installation.



6.2 Configurations used for Simple Certificate Enrollment Protocol (SCEP)

6.2.1 Make sure that following tag is added in "web.config" of web module:

<security></security>	
<requestfiltering></requestfiltering>	
<requestlimits maxqueryst<="" th=""><th>ring="8192"/></th></requestlimits>	ring="8192"/>
<pre><configuration> <location inheritinchildapplications="false" path="."> <location inheritinchildapplications="false" path="."> </location> </location></location></location></location></location></configuration></pre>	

SCEP server URL that will be used for router will be:

- "[Server URL]/scep" e.g "https://beta.web.ra.signinghub.com/scep
- Update URL value in Expect-CT header in "web.config" for web and admin modules according to your deployment URL. e.g. <add name="Expect-CT" value="max-age=0, reporturi='https://adminra.signinghub.com'" />

To test if the code is working properly for web, run command line in [installation-dir]/web and type following command:

C:\Windows\System32\cmd.exe	-	×
Microsoft Windows [Version 10.0.18363.778] (c) 2019 Microsoft Corporation. All rights reserved.		
E:\onlineservices\WebRA\2.1\web>dotnet WebRA.Web.dll		
		\sim

To test if the code is working properly for admin, run command line in [installation-dir]/admin and type following command:



C:\Windows\System32\cmd.exe	-	×
Microsoft Windows [Version 10.0.18363.778] (c) 2019 Microsoft Corporation. All rights reserved.		^
E:\onlineservices\WebRA\2.1\admin>dotnet WebRA.Admin.dll		
		~

6.3 SSL Certificates

ADSS Web RA is a web application that is hosted in IIS. It is recommended to secure the communication between the server and browsers by using SSL over HTTPS. It is also recommended to use an SSL certificate issued by a well-known certificate authority (CA) e.g., Comodo, Symantec, Digicert, etc.

The Administrators portal can be accessed only via TLS client authentication. A default TLS client certificate is already packaged into ADSS Web RA.

6.3.1 Exporting Root and Intermediate Certificates

- 6.3.2 In the [installation_dir]/setup/certs directory there are two files with the name *web-ra-default-admin.cer* and *web-ra-default-admin.pfx*. TLS certificate is installed, but root certificates are not validated by the machine. To validate it, root certificate needs to be imported in the certificate store.
- 6.3.3 Double click the web-ra-default-admin.cer file

Certificate	×
General Details Certification Path	
Certification path	
Certificate status:	View Certificate
This certificate is OK.	
	ОК

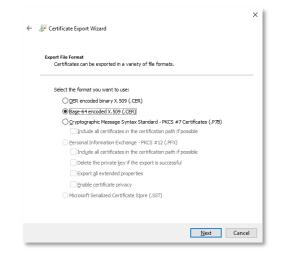
6.3.4 Select the Certification Path tab from the top. The default ADSS Web RA TLS certificate has one root certificate. Select the root certificate and click the View Certificate button. A new window will appear showing general details of the intermediate certificate.

<u>द्व</u> Certifica	e		×
General De	tails Certification	1 Path	
Show: <a< td=""><td> ></td><td>~</td><td></td></a<>	>	~	
Field		Value	^
Version		V3	
🔄 Serial r		0117271aac7a7a1524	
	ire algorithm	sha256RSA	
-	ire hash algorithm		
Issuer		ADSS Default Root CA, Ascerti	
Valid fr		16 January 2014 08:43:02 09 September 2030 08:43:02	
		ADSS Samples Test CA Ascert	~
		Edit Properties Copy to File	
			_
		OK	

6.3.5 Select the Details tab from the top and click Copy to File. This will initiate the certificate export wizard.

←	×
Welcome to the Certificate Export Wizard	
This wizard helps you copy certificates, certificate trust lists and certificate revocation lists from a certificate store to your disk.	
A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.	
To continue, dick Next.	
<u>N</u> ext Cance	21

6.3.6 Click Next.



6.3.7 Select the Base-64 encoded X.509 (.CER) option and click Next

← 🛿 ← Export Wizard	×
File to Export Specify the name of the file you want to export	
File name:	
C:\sw\WEBRA-v1.0-WIndow64-01Oct2019\setup\certs\RootCA.ce	
Next Cano	;ei

6.3.8 Choose a path where you want to save the certificate file for the intermediate certificate, and click Next.

 F Certificate Export Wizard 	×
Completing the Certificate Export Wizard	
You have successfully completed the Certificate Export wizard.	
You have specified the following settings:	- 1
File Name C:\sw\WebRA-v1.0-Win64-01Oct2019	
Export Keys No	- 1
Include all certificates in the certification path No	- 1
File Format Base64 Encoded X.509 (*.cer)	- 1
٢	
	- 1
	- 1
	- 1
Einish Ca	ncel

6.3.9 Click Finish to complete the root certificate export process.

6.4 SSL Configuration for Linux

After installation, SSL certificates must be configured to enable secure communication for WebRA. Follow these steps to configure SSL:

6.4.1 Navigate to the Nginx configuration directory:

The configuration for the SSL device module is stored in the **sites-available** directory. Open the file with a text editor:

sudo nano /etc/nginx/sites-available/webra-ssl-device



6.4.2 Locate the SSL Configuration Block:

Inside this file, find the section where the SSL certificate and key are defined. It should look similar to this:

- ssl_certificate "/var/www/Linux_ED/setup/certs/EST-Server.crt";
- ssl_certificate_key "/var/www/Linux_ED/setup/certs/EST-Server.key";

6.4.3 Update the Certificate Paths:

Modify these lines to point to the correct certificate and key locations:

ssl_certificate "/var/www/Linux_Fresh/setup/certs/EST-Server.crt"; ssl_certificate_key "/var/www/Linux_Fresh/setup/certs/EST-Server.key";

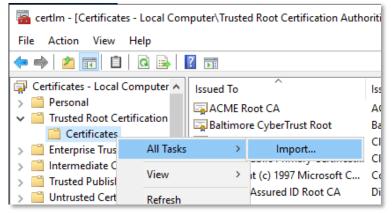
After updating the paths, save and exit the file. Once the configuration is updated, restart Nginx to load the new certificate. By following these steps, the WebRA module will be properly configured to use the provided SSL certificates.

6.5 Importing Root and Intermediate Certificates

Now that we have the intermediate and root certificates exported and saved in a local file, we can import it to the certificate store.

6.5.1 Launch certim.msc from the command prompt.

6.5.2 Expand the **Trusted Root Certification Authorities** folder from the left panel and right-click on **Certificates**. Now select **All Tasks** and then **Import...**





6.5.3 A certificate import wizard appears, Click **Next** to proceed.

÷	🖉 Certificate Import Wizard	×
	Welcome to the Certificate Import Wizard	
	This wizard helps you copy certificates, certificate trust lists, and certificate revocation lists from your disk to a certificate store.	
	A certificate, which is issued by a certification authority, is a confirmation of your identity and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.	
	Store Location <u> <u> <u> </u> <u></u></u></u>	
	To continue, click Next.	
	<u>N</u> ext Cance	ł

6.5.4 Browse the root certificate that we recently exported and click **Next** to proceed.

to Import Specify the file you want to import.
<u>Fi</u> le name:
C:\sw\WebRA-v1.0-Win64-01Oct2019\setup\certs\Root CA.cer
Note: More than one certificate can be stored in a single file in the following formats:
Personal Information Exchange- PKCS #12 (.PFX,.P12)
Cryptographic Message Syntax Standard- PKCS #7 Certificates (.P7B)
Microsoft Serialized Certificate Store (.SST)

6.5.5 Click Next to proceed.

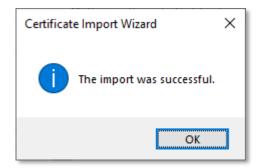
Certificate Store			
Certificate st	ores are system areas whe	re certificates are kept	
the certificat			
	atically select the certificate Il certificates in the followin		pe of certificate
	all certificates in the followin	g store	
	ed Root Certification Autho	rities	Browse

~ |

6.5.6 The root certificate is imported to the certificate store, click **Finish**.

←	🚰 Certificate Import Wizard	Â
	Completing the Certificate Import Wizard	
	The certificate will be imported after you click Finish.	
	You have specified the following settings:	
	Certificate Store Selected by User Trusted Root Certification Authorities	
	Content Certificate	
	File Name C:\sw\WebRA-v1.0-Win64-01Oct2019\setup\certs\R	
	< >>	
	<u> </u>	

6.5.7 A prompt will appear informing about the successful import of the certificate.



If you want to deploy the application for testing purpose you may want to use a self-signed certificate for proof of concept.



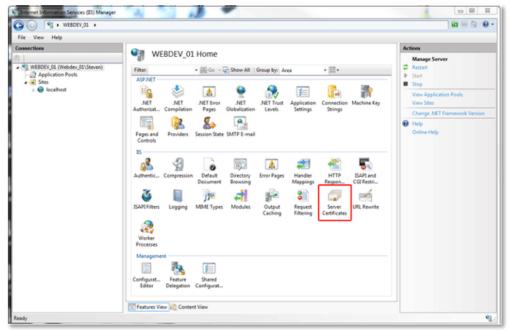
6.6 Generate a Self -Signed Certificate

For testing purpose or proof of concept, mostly a self-signed certificate will be required. It is easy to create a self-signed certificate with IIS.

6.6.1 Launch the IIS Manager.

le View Help		
MUEDEV_01 (Webdev_01\Steven) → Application Pools → Stes > ↓ ↓ Localhost	WEBDEV_01 Home Fitter • @ Go - @ Show All Group by: Area • Astronometric and the second	Actions Manage Server Protein Start Start Start Start View Stes Change NET Framework Version Prime Help Online Help
	35 Image: Configuration of the series <	

6.6.2 Click the Server Name from the Server Connections.





6.6.3 Double-click on Server Certificates from the IIS section in the middle panel.

Conternet Information Services (IIS) Manager					
() () *] • WEBDEV_01 •					🖬 🗟 😧 •
File View Help					
00	47	ertificates est and manage certificates that t Issued To	he Web server can use with Web s Issued By	ites configured for SSL. Expiration Date	Actions Import Create Certificate Request Complete Certificate Request Create Domain Certificate Create Self-Signed Certificate Treate Self-Signed Certificate Preported Self-Signed Certificate Help Online Help
Ready	د 💽 Features View 🔊 Co	m untent View		,	4

6.6.4 Click Create Self-Signed Certificate... under the right Actions column.

eate Self-Signed Certificate	8 X
Specify Friendly Name	
Specify a file name for the certificate request. This information can be sent to a certificate authority for signing:	
Specify a friendly name for the certificate:	
	Const
OK	Cancel



6.6.5 Provide a meaningful name and press **OK**.

S Internet Information Services (IIS) Manager					• • • • •
() () () () () () () () () () () () () (🖬 🖻 🚱 •
File View Help					
	Server Certific Use this feature to request and of Name locatheetssl		Web server can use with Web site Bround By Webslew_01	es configured for SSL. Expiration Date 2/20/2013 7:00	Actions Import Create Certificate Request Create Certificate Request Create Self-Signed Certificate Phip Centine Help
Ready	Features View Content Vi	11 64		,	4

Now you have an SSL certificate that is self-signed and is valid for one year. You can select this certificate for creation of HTTPS binding for testing and proof of concept purposes.



6.7 Generate a CSR for an SSL Certificate

To generate a self-signed SSL certificate follow the steps below:

6.7.1 Launch certim.msc from the command prompt.

			[Certificates - Local (Computer\Pe	rsonal]				-		×	
Eil	e	Actio	n <u>V</u> iew <u>H</u> elp									
-	=) 🖄	i 🗖 i i 🗟 🗟	? 🗊								
Ģ	Ce	rtificat Perso	tes - Local Computer		^	Object Type						
~	1	Trus	Find Certificates	5		There are no	items to	sho	w in this	view.		
>		Ente	All Tasks	>	Fi	nd Certificates						
~	r"	Inte	View	>	Re	equest New Certificate						
			Refresh		In	nport						
>		Trus	Export List		A	dvanced Operations	>		Create	Custom	Request	
>		Unt Thir	Help		es				Manag	e Enrolli	ment Polici	ies
>			ed People		6							

6.7.2 From the left menu, select and right-click the **Personal** folder. From the context menu, select **All Tasks > Advanced Operations > Create Custom request**. A new dialog will appear for certificate enrollment.

	-		×
🙀 Certificate Enrollment			
Before You Begin			
The following steps will help you install certificates, which are digital credentials use networks, protect content, establish identity, and do other security-related tasks.	d to conne:	ct to wire	less
Before requesting a certificate, verify the following:			
Your computer is connected to the network You have credentials that can be used to verify your right to obtain the certificate			
_			
E	Next	Can	cel

6.7.3 Press Next to proceed.

		-		×
🔄 C	ertificate Enrollment			
	Select Certificate Enrollment Policy			
	Certificate enrollment policy enables enrollment for certificates based on predefined Certificate enrollment policy may already be configured for you.	certificate	templates	
	Configured by you		Add Ne	w
	Custom Request			
	Proceed without enrollment policy			
		<u>N</u> ext	Cance	el

6.7.4 Select Proceed without enrollment policy then click Next.

🛱 Certificate Enrollment		~
Custom request		
Chose an option from	the list below and configure the certificate options as required.	
Template:	(No template) CNG key \checkmark	
	Suppress default extensions	
Request format:	<u>PKCS #10</u>	
	<u>⊂</u> mc	
	not available for certificates based on a custom certificate request, even when this the certificate template.	
	<u>N</u> ext Cancel	

6.7.5 Accept the default values and press Next without changing anything

		-		×
Certificate Enrollment				
Certificate Information				
Click Next to use the options already request, and then click Next.	y selected for this template, or click Details to cust	omize th	e certifica	ite
Custom request	(i) STATUS: Available		Details	
The following options describe Key usage: Application policies: Validity period (days):	e the uses and validity period that apply to this typ		ificate: roperties	
		<u>N</u> ext	Can	cel

6.7.6 Click **Details** and the Properties button will appear. Click **Properties**.

Certificate Properties	×
General Subject Extensions Private Key	
	omputer to which the certificate is issued. You subject name and alternative name values that
Subject of certificate	
The user or computer that is receiving the	certificate
Subject name:	
<u>T</u> ype:	CN=webra.pki.acme.com
Full DN V	Add > O=ACME
Value:	C=GB
Alternative name:	
Тұре:	DNS
DNS ~	webra.pki.acme.com
Val <u>u</u> e:	Add >
	400 >
<	Remove
	OK Cancel Apply



6.7.7 Select the Subject tab from the top. For subject name enter CN=webra.pki.acme.com,

OU=Web Servers, O=ACME, C=GB in the value and press Add >. For Alternate name enter DNS value as webra.pki.acme.com.

These values are the sample values used for certificate creation and can be replaced with the realistic data.

Certificate Properties		×
General Subject Extensions Private Key		
The following are the certificate extensions for this certificate type.		^
Key usage	^	
The key usage extension describes the purpose of a certificate. Available options: Selected options: CRL signing Digital signature Data encipherment Decipher only Encipher only Add > Key agreement Key certificate signing Remove		
Extended Key Usage (application policies)	~	
Partie servet with the		
Basic constraints	•	¥
OK Cancel	<u>A</u> pply	(

- 6.7.8 Select the Extensions tab from the top. Select the Key usage option from the drop down extensions. Now from the Available options, choose the following:
- Digital signature
- Key encipherment
- Non repudiation

Make sure you tick the Make these key usages critical checkbox.

6.7.9 Now select the Extended Key Usage (application policies) from the drop down, and Server Authentication from the list.

Certificate Properties		×
General Subject Extensions Private Key		
Extended Key Usage (application policies) An application policy (called enhanced key usage in W certificate can be used. Select the application policy re certificates issued by this template. Available options: <u>Client Authentication</u>		^
Secure Email Time Stamping Microsoft Trust List Signin Microsoft Time Stamping IP security tunnel termina IP security tunnel termina IP security user		
Make the Extended Key Usage critical	< >	
<u>B</u> asic constraints	*	
Include Symmetric algorithm	*	~
OK	Cancel App	ly



6.7.10 Select the Private Key tab from the top. Select the Cryptographic Service Provider option from the first drop down and Key options from the second drop down. Change the Key size to 2048 and click OK. The Certificate Enrollment screen will appear again.

Certificate Properties	×
General Subject Extensions Private Key	
Cryptographic Service Provider	~
Key <u>op</u> tions Set the key length and export options for the private key.	^
Key size: 2048	
Make private key exportable	
Allow private key to be archived	
Strong private key protection	
Select <u>H</u> ash Algorithm	*
Select Signature Format	~
Key germissions	~
OK Cancel	Apply

6.7.11 Press Next to proceed.

		-		×
🙀 Certificate Enrollment				
Certificate Information				
Click Next to use the options a request, and then click Next.	lready selected for this template, or click Details to custo	mize the	e certificat	e
Custom request	 STATUS: Available 		Details	•
Key usage:	scribe the uses and validity period that apply to this type Digital signature Key encipherment Non repudiation Server Authentication :		operties	
	1	<u>v</u> ext	Cano	el

6.7.12 Browse the location to save the request file and select the Base 64 file format. Press Finish. This request file can be submitted to any CA to create a certificate against this request. Every CA processes the request and generates a certificate as per their own policy. Once the certificate is received from a CA it can be imported into the certificates.

	-		×
🙀 Certificate Enrollment			
Where do you want to save the offline request?			
If you want to save a copy of your certificate request or want to process the request la to your hard disk or removable media. Enter the location and name of your certificate click Finish.			st
File Name:	_		
C:\sw\webra.pki.acme.com.req	B	rowse	
File format: ● Bgse 64 ○ Binary			
	inish	Cano	el :

For further details contact us on sales@ascertia.com or visit www.ascertia.com

*** End of Document ***