

ADSS Web RA Server 2.9.3

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
НТТР	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:
	https://manuals.ascertia.com/WebRA-v2.9.3/ADSS-WebRA-
	Server-Platform-Support.pdf
Microsoft IIS	• IIS 10
	Application Development feature in IIS
IIS Rewrite Module	• v2.1
.Net Framework	.Net Framework 4.8. or above
.Net Core Runtime & Hosting Bundle	ASP.NET Core Runtime 8.0 or above



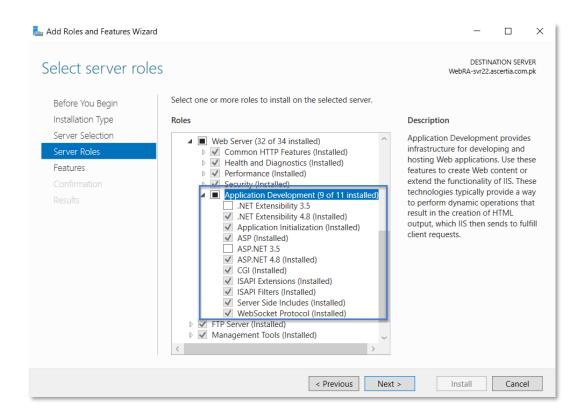
Database Server Web Brower (for end-users and administrators)	 Follow this link to view details about Database Server: https://manuals.ascertia.com/WebRA-v2.9.3/ADSS-WebRA-Server-Platform-Support.pdf Follow this link to view details about Web Browsers: https://manuals.ascertia.com/WebRA-v2.9.3/ADSS-WebRA-Server-Platform-Support.pdf
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 8.0.3. Runtime & Hosting Bundle

2.4.1 Download the latest version of Microsoft .Net Core i.e. Microsoft .Net Core 8.0.3. Runtime and Hosting Bundle from the following link:

Microsoft .Net Core 8.0.3. Runtime & Hosting Bundle

2.4.2 Download the Hosting Bundle installer.

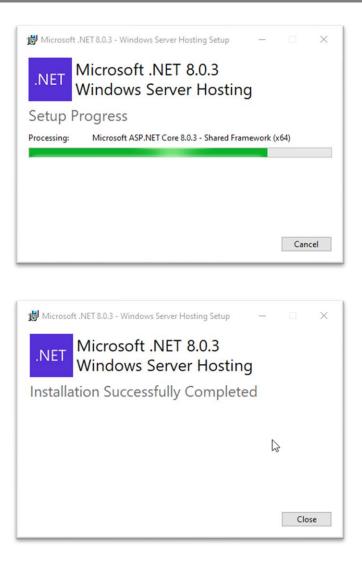
Build app	s - SDK 💿		Run app:	s - Runtime 💿	
SDK 8	3.0.203		ASP.N	NET Core Runtime	8.0.3
os	Installers	Binaries			run existing web/server applications. On Windows ndle, which includes the .NET Runtime and IIS
Linux	Package manager instructions	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine	support.		
macOS	Arm64 x64	Arm64 x64	18.0.2404	ne support (ASP.NET Core Modu 7.3	ile v2)
Windows	Arm64 x64 x86 winget instructions	<u>Arm64 x64 x86</u>	os	Installers	Binaries
All	dotnet-install scripts		Linux	Package manager instructions	Arm32 Arm32 Alpine Arm64 Arm64 Alpin x64 x64 Alpine
ncluded i			macOS		Arm64 x64
	ore Runtime 8.0.3		Windows	Hosting Bundle x64 x86	Arm64 x64 x86
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anguage	support		NICT		
# 12.0			.INE I	Desktop Runtime	8.0.3
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# 8.0 /isual Basi	ic 16.9 3.0.202		The .NET	Desktop Runtime enables you to r	un existing Windows desktop applications. This
# 8.0 Fisual Basi		Binaries	The .NET release in	Desktop Runtime enables you to r includes the .NET Runtime; you d Installers	un existing Windows desktop applications. This on't need to install it separately. Binaries
# 8.0 Fisual Basi	3.0.202	Binaries Arm32 Arm52 Alpine Arm54 Arm54 Alpine x64 x64 Alpine	The .NET release in OS Windows	Desktop Runtime enables you to r includes the .NET Runtime; you d Installers	un existing Windows desktop applications. This on't need to install it separately. Binaries
# 8.0 /risual Basi SDK 8 os Linux	3.0.202 Installers	Arm32 Arm32 Alpine Arm64 Arm64 Alpine	The .NET release in OS Windows .NET The .NET	Desktop Runtime enables you to r scludes the .NET Runtime; you d Installers Arm64 x64 x86 wingel Runtime 8.0.3 Runtime contains just the comport	un existing Windows desktop applications. This on't need to install it separately. Binaries tinstructions ents needed to run a console app. Typically, you'de
# 8.0 Fisual Basi SDK 8 os Linux macOS	3.0.202 Installers Package manager instructions	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine	The .NET release in OS Windows .NET The .NET	Desktop Runtime enables you to r Indudes the .NET Runtime: you d Installers Arm64 x64 x86 wingel Runtime 8.0.3	un existing Windows desktop applications. This on't need to install it separately. Binaries tinstructions ents needed to run a console app. Typically, you'de
# 8.0 fisual Basi SDK 8 os Linux macOS Windows	3.0.202 Installers Package manager instructions Arm64 x64 Arm64 x66	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine Arm64 x64	The .NET release in OS Windows .NET The .NET also insta	Desktop Runtime enables you to r includes the .NET Runtime: you d Installers Arm64 x64 x86 wingel Runtime 8.0.3 Runtime contains just the comport I either the ASP.NET Core Runtime	un existing Windows desktop applications. This on't need to install it separately. Einstructions enerts needed to run a console app. Typically, you'd e or .NET Desktop Runtime.
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2.4.1. Once downloaded, execute the installer by executing dotnet-hosting-8.0.3-win.exe

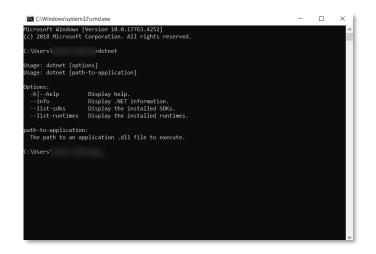


2.4.2. The setup will begin and take a few minutes to complete.





- **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.

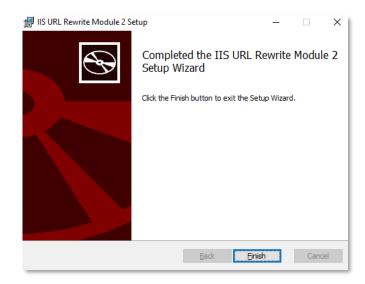
Download URL Rewrite Module 2.1	
English: x86 installer / x64 installer	
German: x86 installer / x64 installer	
Spanish: x86 installer / x64 installer	
French: x86 installer / x64 installer	
Italian: x86 installer / x64 installer	
• Japanese: x86 installer / x64 installer	
Korean: x86 installer / x64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

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:

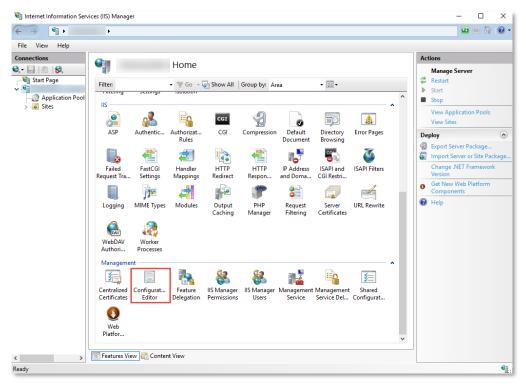


2.5.6. Click **Finish** once the installation process is complete.



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.

enabled True enableNagling False frequentHiThreshold 2 frequentHiTimePeriod 00:00:10 maxRequestEntityAllowed 4294967295		۱.		🔛 🖂 🙆 🔞
Start Page Configuration Editor Start Page Section: [system.webServer/server/kuntime] Despest Path: MACHINE/WEBROOT/APPHOST Cancel alternateHostName Sould appConcurrentRequestLimit Sould authenticatedUser/veride UseAuthenticatedUser enabled True frequentHitTimePriod 2000/10 maxRequestEntityAllowed 4294967295	e View Help			
Section: ystem.webServer/serverRuntime Section: secction: section: section: section: section: secction: section: sect	inections			Actions
Start Page Section: system.webServer/ServerRuntime Despest Path: MACHINE/WEBROOT/APPHOST alternateHostName appConcurrentRequestLimit Sites Poepest Path: MACHINE/WEBROOT/APPHOST alternateHostName appConcurrentRequestLimit UseAuthenticatedUser enabled True Unlock Section Unlock Section Help If requentHit TimePriod 0000:10 Help Help If Help Help Help Help 		Configuration Editor		RV Apply
Image: Constraint of the second se	Start Page	Section: system.webServer/serverRuntim	e 🗸	
Application Pools Sites Sites Sites Sites Configuration Secch Configurat	El			
appConcurrentRequestLimit 5000 Search Configuration authenticatedUserOverride UseAuthenticatedUser Search Configuration enabled True Index Search Configuration enabled True Index Search Configuration enableMagling False Unlock Section frequentHitTimePeriod 0:00:10 Index Search Configuration mxRequestEntityAllowed 4294967295 Help			/APPHOST	
authenticated/JserOverride UseAuthenticated/User Section enabled True Unlock Section enableNagling False Unlock Section frequentHitThreshold 2 ImaxRequestEntityAllowed maxRequestEntityAllowed 4294967295	> - 🚺 Sites		5000	
enabled True Section enableNagling False Unlock Section frequentHitTinreshold 2 Help frequentHitTimePeriod 00:00:10 Help				
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frequentHitThreshold 2 Heip frequentHitTimePeriod 00:00:10 maxRequestEntity/Allowed				Unlock Section
frequentHitTimePeriod 00:00:10 maxRequestEntityAllowed 4294967295			2	Help
		frequentHitTimePeriod	00:00:10	
unloadBeadGize 49152		maxRequestEntityAllowed	4294967295	
aprovince as a second		uploadReadAheadSize	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

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:

Welcome to W	eb RA							
Web RA is a centra register users to off RAS/SAM services documents using t and distribution pr	er them different as well as push hese keys. Web	nt sets of certific users to Web RA RA is ideal for th	ation services. It All of them are he organizations	can also registe powerful applic that are looking	r users to ADSS ations to create to centrally con	CSP services, certificates ar	ADSS nd sign th	he
Web RA consists of	the following r	modules:						
- Web RA Admin								
- Web RA Desktop								
- Web RA API (RES - Web RA Device	ful Web Service	es)						
- Web RA Windows	Enrolment							
We strongly recom	mend you to fo	llow the installa	tion instructions	provided in <u>We</u>	b RA Installation	n Guide		
U.S. Patent No. 7	,360,079							

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 ASP .Net Core v8.0.0 or above Microsoft Internet Information Services (IIS) v10.0 or above URI. Rewrite in Internet Information Services (IIS)		Success Success Success Success	
ASP .Net Core Module in Internet Information Services (IIS) runtime support		Success	
	Next	Can	icel

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		
🔿 Uninstall Web RA		
	Next	Car

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	
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 (toget	her the
Product) in this installation package to you as an individual or as an authorised representative of the cor	
legal entity that will be using the Software only on condition that you accept all of the terms of this licer 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 te	
this License Agreement, click on the "I disagree" button below and exit the installation process and mak	
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	NT, DO
NOT INSTALL OR USE THE ASCERTIA SOFTWARE.	
Licensee and Ascertia may hereinafter be referred to as individually, a "Party", or, together, the "Parties."	0
2.0 LICENSE	
Evaluation Copy. If you acquired the license for the Software on an evaluation basis, you may use the Software on an evaluation basis, you way use the Software on an evaluation basis,	
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.	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 Managemer	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:	*****		

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 Database Cor	figurations		
Database Management Sys	em Type		
Microsoft SQL Server	it.		
Installation Type			
⊖ Basic	Advanced		
Database Configurations			
Connection String:	data source= Production-Server;initial catalog= WebRA;user id=sa;password=password;MultipleActiveResultSets=True;Pooling=true		

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:

sections	Applicati	on Pools					
	Appliedd	0111 0015					
Start Page WEBRA-RC1 (ASCERTIA0\aasim.shehzad)	This page lets you view isolation among differe	and manage the list on nt applications.	of application pools on the ser	ver. Application pools a	re associated with worker processes, con	tain one or more applica	
Sites	Filter:	• 🐨 Go - 🖓	Show All Group by: No Gr	ouping •	Advanced Settings		? ×
> 😂 admin	Name	Status .N	IET CLR V Managed Pipel	Identity	✓ (General)		~
Default Web Site	2	Started v4	1.0 Integrated	ApplicationPoolld	.NET CLR Version	v4.0	
> e device	2	Started v4	1.0 Classic	ApplicationPoolld	Enable 32-Bit Applications	False	
> 💮 ssldevice		Started v4	1.0 Integrated	ApplicationPoolld	Managed Pipeline Mode	Integrated	
> 🚱 web	2	Started v4		ApplicationPoolId	Name	1000	
	0	Started v4		ApplicationPoolld	Queue Length Start Mode	OnDemand	
	2	Started v4		ApplicationPoolld	V CPU	UnDemand	
	2	Started v4		ApplicationPoolId	Limit (percent)	0	
	2	Started v4		ApplicationPoolld	Limit (percent)	NoAction	
	web 2	Started v4	1.0 Integrated	ApplicationPoolId	Limit Interval (minutes)	s	
		ication Pool			Processor Affinity Enabled	False	
	Set Appli	ation Pool Defaults			Processor Affinity Mask	4294967295	
	▶ Start				Processor Affinity Mask (64-bit of		
	Stop				Y Process Model		
	2 Recycle				> Generate Process Model Event L		
	Basic Set				Identity	ascertia0\webra.ga	4
	- Case	-			Idle Time-out (minutes)	20	
	Recycling				Idle Time-out Action	Terminate	~
		l Settings	3		Identity		
	Rename				[identityType, username, password]	Configures the applicati	on pool to run
	× Remove				as built-in account, i.e. Application	Pool Identity (recommer	ded), Network
	View App	lications			Service, Local System, Local Service,	or as a specific user ider	tity.
	P Help						
	W Help					OK	Cancel



4.1.8 Click the Next button to select specific modules:

Fully Qualified D	omain Name:	server2022-WebRA.asc	ertia com nk		1	
I Fully qualified		be set for the all instance		s. It will not upda	te the systen	ı
Web RA Adm						
	Website Name:	admin	Port:	58]	
✓ Web RA Web						
	Website Name:	web	Port:	59]	
Web RA API (RESTful Web Service	rs) N				
	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.

Web RA De				
Website		device	Port:	61
HTTPS (In	stall SCEP, CMP, ACME, EST)			
Website	Name (SCEP, CMP, ACME, EST):	device	Port:	62
Client Aut	hentication (Install EST)			
Website	Name (EST):	ssldevice	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 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.



4.1.10 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		
rion.	All email notifications will be sent from this address.		
- Failure Email Configu	ations		
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:

Item	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 KA 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.

Installation Dress		
Installation Prog	ress	
Evecuting databases	cript for Web RA on database: WebRA-Database	.
	ript for Web RA on database: WebRA-Database	^
	an script for Web RA on database: WebRA-Database	
Creating default con		
	nectors and Certification profiles	
	igurations in database	
	Web RA Admin: admin	
Creating website for		
Creating website for		
	Web RA Device: device	
	ling for Web RA Device: device	
Creating website for	Web RA SSL Device: ssldevice	
Creating windows in	tegrated CEP service site : windowsIntegratedCepService	
Creating windows in	tegrated windows CES service site : windowsIntegratedCesService	
	Password windows CEP service site : windowsIntegratedCepService	
	Password windows CES service site : windowsIntegratedCesService	
	s CEP service site : windowsIntegratedCepService	
	vs CES service site : windowsSsICesService	
Updating system set		
Web RA installation	completed!	~

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			
○ 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			
O Uninstall Web RA			
Ι	Next	Can	icel

4.2.3 Click the Next button to show the License Agreement.

License Agreement	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMEN IMPORTANT - PLEASE READ CAREFULLY:	NT
1.0 ACCEPTANCE.	
Product) in this installation package to you as an i legal entity that will be using the Software only on agreement. You or the company or legal entity (re Agreement by clicking on the "1 agree" button bel	his software (the Software) and documentation (together the ndividual or as an authorised representative of the company or condition that you accept all of the terms of this license ferred to as the Licensee) can accept the terms of this License ow, and proceed with the installation. To reject the terms of utton below and exit the installation process and make no
	WARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO BE YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, DO
Licensee and Ascertia may hereinafter be referred	to as individually, a "Party", or, together, the "Parties."
2.0 LICENSE	
without charge until the evaluation limits are reac	ne Software on an evaluation basis, you may use the Software hed or for a maximum of 3 months from the day that you ppropriate 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**.

Web RA Database	Computations	
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	- 0	×
Web RA Database Conf	igurations	
Database Management Syste	m Type	
Microsoft SQL Server		
Installation Type		
O Basic	Advanced	
Database Configurations		
Connection String:	data source= Production-Server;initial catalog= WebRA;user id=sa;password=password;MultipleActiveResultSets=True;Pooling=true	
	Next C.	ancel

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.

	-		×
← 🔏 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	n	
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	Car	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.

	Device Modules RA Device				
⊣⊡ нт	TP (Install SCEP) Website Name:	device	Port:	84	
И НТ	TTPS (Install CMP, ACME, EST) Website Name (CMP, ACME, EST):	device	Port:	85	
Clin	ent Authentication (Install EST) Website Name (EST):	ssldevice	Port:	86	

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

W	/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	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.



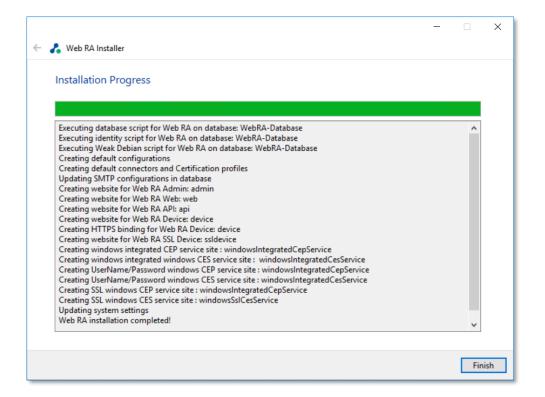
The following table explains the Windows Enrolment section.

Item	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 DA Installation Commence			
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.



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

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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



4.3 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 			
 Upgrade an existing Web RA instance to the latest one Change database credentials Uninstall Web RA 			
	Next	Can	cel

4.3.3 Click the **Next** button to show 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 (togethe Product) in this installation package to you as an individual or as an authorised representative of the comp 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 License) can accept the terms of this License Agreement by clicking on the "I agree" button below, and proceed with the installation. To reject the term this License Agreement, click on the "I disagree" button below and exit the installation process and make r further use of the software.	pany or e cense ns of
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO I BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMEN 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 Soft without charge until the evaluation limits are reached or for a maximum of 3 months from the day that yo install the Software. After this you must pay the appropriate license fee to continue to use the Software. I	bu

- 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:	********	7	
		-	

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**.

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.

Database Management Syst	em Type
Microsoft SQL Serve	r
Installation Type	
 Basic 	Advanced
Database Configurations	
Connection String:	data source= Production-Server;initial catalog= WebRA;user id=sa;password=password;MultipleActiveResultSets=True;Pooling=true

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 explains the Advanced Database Configurations

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 Modules	5				
Fully Qualified Dor	main Name:	webra.ascertia.com.pk			
Fully qualified of setting for existing		be set for the all instances i	n system settings	. It will not upda	te the system
Web RA Admin	i				
	Website Name:	admin	Port:	443	
Web RA Web					
	Website Name:	web	Port:	81	
🗹 Web RA API (RE	ESTful Web Service	s)			
	Website Name:	арі	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.

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	

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)	windowsSsICepService	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.

Item	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.

		-		\times
←	🐍 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	Cano	cel

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.

Installation Progress	
Executing database script for Web RA on database: WebRA-Database	^
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 We Device: ssldevice	
Creating windows integrated CEP service site : windowsIntegratedCepService	
Creating windows integrated windows CES service site : windowsIntegratedCesService	
Creating UserName/Password windows CEP service site : windowsIntegratedCepService Creating UserName/Password windows CES service site : windowsIntegratedCesService	
Creating OserName/Password windows CES service site : windowsintegratedCepService	
Creating SSL windows CEP service site : windowsintegrated Cepservice	
Updating system settings	
Web RA installation completed!	
web to installation 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

	_		\times
← 🔏 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			
I	Next	Can	cel

4.4.3. Click the 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 (togethe Product) in this installation package to you as an individual or as an authorised representative of the comp 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 term this License Agreement, click on the "I disagree" button below and exit the installation process and make r further use of the software.	oany or e cense ns of
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO E BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMEN 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 Soft without charge until the evaluation limits are reached or for a maximum of 3 months from the day that yo install the Software. After this you must pay the appropriate license fee to continue to use the Software. T	u



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 Website Name: admin Port: 444				
Web RA Web Website Name: web Port: 81				
Web RA API (RESTful Web Services) Website Name: api Port: 83				
	[Next	Ca	ancel



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 SC	EP) e Name:	device	Р	ort:	84	
HTTPS (Install (
Website	e Name (CMP, ACME, EST):	device	P	ort:	85	
Client Authentie	cation (Install EST)					
Website	e Name (EST):	ssldevice	P	ort:	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)	windowsSsICesService	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.

Web RA 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.

← 🔏 Web RA Installer		_		×
Upgrade Progress				
Changing website paths to the new Updating system settings Web RA upgrade completed!	Veb RA directory		^	
			~	
			Finis	;h

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			
in balladon (jpc			
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	Car	icel

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.	
Ascerta Linked. "Ascertia") is willing to license this software (the Software) and documentation (togeth Product) in this installation package to you as an individual or as an authorised representative of the com legal entity that will be using the Software only on condition that you accept all of the terms of this licens agreement. You or the company or legal entity (referred to as the Licensee) can accept the terms of this L Agreement by clicking on the "l agree" button below, and proceed with the installation. To reject the terr this License Agreement, click on the "l disagree" button below and exit the installation process and make further use of the software.	npany or se license ms of
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEME 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 Sof without charge until the evaluation limits are reached or for a maximum of 3 months from the day that y install the Software. After this you must pay the appropriate license fee to continue to use the Software.	ou

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.

data security section in Web RA admin portal before	`
upgrade.	
ise of ADSS Web RA Server adds support for operators to to locate digital certificates that can then be manually or	ļ
assign newly discovered certificates to Web RA users to y events, or to enable certificate owners to configure Web techanism such as SCEP, ACME, EST etc.	
ertificates that have been assigned to them via the Web RA	
shboard and can perform sorting, modifications, advanced	
	ise of ADSS Web RA Server adds support for operators to to locate digital certificates that can then be manually or assign newly discovered certificates to Web RA users to y events, or to enable certificate owners to configure Web techanism such as SCEP, ACME, EST etc.

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		
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.ascer	tia.com.pk			
I Fully qualified domain name w setting for existing instances.	ill be set for the all ins	tances in system settir	igs. It will not u	update the syst	em
🗹 Web RA Admin					
Website Nam	e: admin	Por	t: 443		
Web RA Web					
Website Nam	e: web	Por	t: 81		
Web RA API (RESTful Web Serv	ces)				
Website Nam	e: api	Por	t: 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.



	_		×
← 🔏 Web RA Installer			
Web RA Device Modules			
Web RA Device			- 1
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			
			<u> </u>
I	Next	Can	cel

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

W	/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	1
	Certificat Enrolement Service (CES)	windowsSsICesService	Port:	92	1

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	ncel

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		\sim	
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 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 enrorment services :			
windowsIntegratedCesService			
Creating SSL windows CEP service website for Web RA window enrolment services : windowsIntegrated	CepService	2	
Creating SSL windows CES service website for Web RA window enrolment services : windowsSslCesServi	ce		
Updating system settings Please wait while migrating the certificate to the new structure			
Migrating the certificate to the new structure completed			
Web RA upgrade completed!			
		· ·	
		Fin	ish

- **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 			
O Upgrade an existing Web RA instance to the latest one			
Ohange database credentials			
O Uninstall Web RA			
_			
L	Next	Can	cel

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



License Agreem	ent			
ASCERTIA SERVER S	OFTWARE LICENSE AGREEM	ENT		^
IMPORTANT - PLEA	SE READ CAREFULLY:			
1.0 ACCEPTANCE.				
Product) in this inst legal entity that will	allation package to you as a be using the Software only	this software (the Software) and o individual or as an authorised rep on condition that you accept all of	resentative of the company o the terms of this license	e
Agreement by clicki	ng on the "I agree" button t ent, click on the "I disagree"	referred to as the Licensee) can ac elow, and proceed with the install button below and exit the installa	ation. To reject the terms of	
BOUND BY THE TER		TWARE, YOU AGREE FOR YOU OR YOU DO NOT AGREE TO THE TER		
Licensee and Ascert	ia may hereinafter be referre	d to as individually, a "Party", or, t	ogether, the "Parties."	
2.0 LICENSE				
without charge unti	the evaluation limits are re	the Software on an evaluation bas iched or for a maximum of 3 mon appropriate license fee to continu	ths from the day that you	

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

lanagement Sy: rosoft SQL Sen Type				
Type				
ic	Advanced			
onfigurations				
rver:	Production-Server			
	1433			
ame:	WebRA			
	Use windows authentication			
	sa			
	onfigurations – erver: ame:	onfigurations erver: Production-Server 1433 ame: WebRA Use windows authentication	ame: WebRA Use windows authentication	onfigurations erver: Production-Server 1433 ame: WebRA Use windows authentication

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



	-		×
🗁 🧞 Web RA Installer			
Installation Progress			
Changing database credentials process started		<u>^</u>	
Web RA Admin database credentials changed			
Web RA Web database credentials changed Web RA API 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 SSL CES service database credentials changed Web RA Windows SSL CES service database credentials changed			
Changing database credentials process completed			
		~	
		Fin	ish
			1311

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

4.7 Regular Release Installation

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.

← → • WEBRA-RC1 →									
File View Help Connections Co	Filter: ASP.NET NET Authorizat Machine Key	.NET		Show All NET Globalization Session State	.NET Trust Levels	Application Settings	• • • • • • • •		Start Stop View Application Pools View Sites Get New Web Platform Components
 v2.9_RR_windowsSsICepServix v2.9_RR_windowsSsICesServic v2.9_RR_windowsUserNameP v2.9_RR_windowsUserNameP 	Authentic	Compression	Default Document	Directory Browsing	Error Pages	Failed Request Tra	Handler Mappings	~	



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:

	- 0
🐍 Web RA Installer	
Welcome to Web RA	
Web RA is a central application for key management and certificate generation in register users to offer them different sets of certification services. It can also regis RAS/SAM services as well as push users to Web RA. All of them are powerful app documents using these keys. Web RA is ideal for the organizations that are lookin and distribution process by implementing strong vetting for the issuance of these documents using the set with the set of the	ter users to ADSS CSP services, ADSS lications to create certificates and sign the ng 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 $\underline{\mathbb{V}}$	Veb 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.



Web PA Installer	_		
🔏 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		Success Success	
URL Rewrite in Internet Information Services (IIS) V10.0 or above		Success	
ASP .Net Core Module in Internet Information Services (IIS) runtime support		Success	
		_	
	Next	Car	nc

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 v2.9.1 to an existing Web RA instance Change database credentials Uninstall Web RA				×
 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 Apply release v2.9.1 to an existing Web RA instance Change database credentials Uninstall Web RA 	🔏 Web RA Installer			
 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 v2.9.1 to an existing Web RA instance Change database credentials Uninstall Web RA 	Installation Type			
 Install Web RA with an existing database Upgrade an existing Web RA instance to the latest one Apply release v2.9.1 to an existing Web RA instance Change database credentials Uninstall Web RA 	O Install Web RA for the first time			
 Upgrade an existing Web RA instance to the latest one Apply release v2.9.1 to an existing Web RA instance Change database credentials Uninstall Web RA 	\bigcirc Install Web RA as another instance within a load-balanced configuration			
 Apply release v2.9.1 to an existing Web RA instance Change database credentials Uninstall Web RA 	Install Web RA with an existing database			
 Change database credentials Uninstall Web RA 	O Upgrade an existing Web RA instance to the latest one			
O Uninstall Web RA	Apply release v2.9.1 to an existing Web RA instance			
	Change database credentials			
Next	O Uninstall Web RA			
Next				
Next				
Next				
Next Cance				
		Next	Ca	ncel



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

icense Agreement	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT	^
MPORTANT - PLEASE READ CAREFULLY: v2.9.1	
.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	
egal 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	
his License Agreement, click on the "I disagree" button below and exit the installation process and make no	
urther 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.	
icensee and Ascertia may hereinafter be referred to as individually, a "Party", or, together, the "Parties."	
2.0 LICENSE	
valuation 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	
nstall the Software. After this you must pay the appropriate license fee to continue to use the Software. To pay	~

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 Jomain 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 Environmer 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 upports auto-registration of Virtual ID and SigningHub account, certificate generation and auto-provisioning /irtual ID certificate to SigningHub.	
n the ADSS Web RA Server, users now have the ability to generate certificates for various purposes using Deskto signing profiles. Additionally, administrators can manage certificate provisioning through enterprise roles.	p 🗸



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

Existing Web RA Configurations		
Browse the existing Web RA installation directory:		
C:\WebRA\Installer-RR\WebRA-v2.9-Win64-26Dec2023	Browse	
Web 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	b RA installation directory:	
	\WebRA-v2.9-Win64-26Dec2023	Browse
Web RA release will be	applied to this directory.	
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 Progress	
Executing 'v291' patch scripts on database 'v2.9-RR-367' Creating a backup of the existing Web RA installation directory Applying release v2.9.1 files to path: C:\WebRA\Installer-RR\WebRA-v2.9-Win64-26Dec2023 Web RA release applied 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.

→ → SERVER2022-WEE	8R ► Sites ►	14034-admin	•						🖬 🛛 🔂 I
onnections	140)34-admii	n Home					A.	ctions Explore
Image: Start Page ▲ Image: Start Page ■ Image: Page: Start Page ■ Image: Page: Page: Start Page ■ Image: Page:	Logging WebDAV Authori Manageme	Compression JMIME Types	Default Document	Show All	Group by: A	Handler Mappings	- III-	M 22 •	View Applications View Virtual Directories lanage Website Restart Stop Browse Website

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 Installer Web RA Installer			
Welcome to Web RA			
Web RA is a central application for key management and certificate generation in the Ascertia produ register users to offer them different sets of certification services. It can also register users to ADSS CS RAS/SAM services as well as push users to Web RA. All of them are powerful applications to create cc documents using these keys. Web RA is ideal for the organizations that are looking to centrally contr and distribution process by implementing strong vetting for the issuance of these certificates.	SP services, a ertificates 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 Pevice - Web RA Windows Enrolment We strongly recommend you to follow the installation instructions provided in <u>Web RA Installation (</u>	Guide		
U.S. Patent No. 7,360,079			
	Next	Car	ncel



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.

← 🔥 Web RA Installer	- □	×
Checking System Requirements		
Microsoft .NET Framework v4.8 or above ASP .Net Core v8.0.0 or above Microsoft Internet Information Services (IIS) v10.0 or above URL Rewrite in Internet Information Services (IIS) ASP .Net Core Module in Internet Information Services (IIS) runtime support	Succes Succes Succes Succes Succes	5 5
	Next	ancel

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	cel



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

icense Agreement	
ASCERTIA SERVER SOFTWARE LICENSE AGREEMENT	•
IMPORTANT - PLEASE READ CAREFULLY:	<u> </u>
1.0 ACCEPTANCE.	
Ascertia Limited ("Ascertia") is willing to license this software (the Software) and documentation (togeth Product) in this installation package to you as an individual or as an authorised representative of the com legal entity that will be using the Software only on condition that you accept all of the terms of this licens agreement. You or the company or legal entity (referred to as the Licensee) can accept the terms of this L Agreement by clicking on the "I agree" button below, and proceed with the installation. To reject the terr this License Agreement, click on the "I disagree" button below and exit the installation process and make further use of the software.	npany or se .icense ms of
BY INSTALLING AND USING THIS ASCERTIA SOFTWARE, YOU AGREE FOR YOU OR YOUR ENTERPRISE TO B	RF
BOUND BY THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMEN 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 Sof without charge until the evaluation limits are reached or for a maximum of 3 months from the day that y install the Software. After this you must pay the appropriate license fee to continue to use the Software.	ou

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

	-		×
Le 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 rele	ase.		
L	Next	Ca	ncel



4.8.6 Click the Next button to provide:

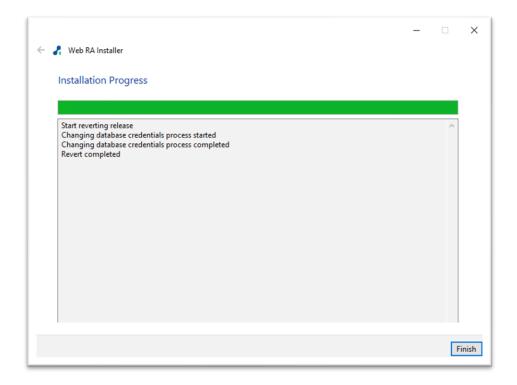
- 1. Browse the existing Web RA installation directory
- 2. Previous release backup directory will be set automatically. You also have the option to browse and select your own path.

	_		\times
🔏 Web RA Installer			
Previous Web RA 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-Win64-23Fe	Browse		
	Nex	t C	ancel

4.8.7 Click next to view database details:

Web RA Database Con			
 Microsoft SQL Serv 			
Installation Type			
Basic	Advanced		
Database Configurations			
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.





5 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.

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

5.2. 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			
O 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	Can	cel

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

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

		_		\times
← 🔏 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 RA SSL Device - Web RA Windows Enrolment Services				
			_	
		Next	Can	cel



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

Uninstallation Progress	
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

5.5. 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.



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: <u>https://support.microsoft.com/en-us/kb/2464556.</u>

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	×	
General Sharing Security Previous Versions Customize	Permissions for WebRA X	
Object name: D:\WebRA Group or user names:	Security Object name: D:\WebRA Group or user names:	
Authenticated Users	Authenticated Users	
SYSTEM	SYSTEM	
Administrators (DOTNET-TAHSEEN\Administrators)	Administrators (DOTNET-TAHSEEN\Administrators)	
Series (DOTNET-TAHSEEN\Users)	Service and the service of the servi	
To change permissions, click Edit,		
Permissions for Authenticated Users Allow Deny		
Full control	Add Remove	
Modify	Users Select Users or Groups	×
Read & execute	Full contro	~
List folder contents	Modify Select this object type:	
Read	Read & ex Users, Groups, or Built-in security principals	Object Types
Write 🗸 🗸	Listfalder	object types
For special permissions or advanced settings, Advanced	From this location:	
click Advanced. Advanced	DOTNET-TAHSEEN	Locations
	Enter the object names to select (examples);	
		Check Names
		Check Names
OK Cancel Apply	12/14/2018	
Mail	12/14/2018	
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.

'aul' Jos Jos ← Ilar	Ertificate Import Wizard	×
llar vin vin ub-	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.	
Ŀ	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 Current User (Local Machine	
L	To continue, dick Next.	
	S Next Cancel	

• 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.

Act	
Modules Modules	Add Managed Module
Use this feature to configure the native and managed code modules that process reguests made to the Web server.	Configure Native Modules
	Edit
	Remove
Name Code Module Type Entry Type	Revert To Parent
DirectoryListingModule %windir%System32kinetsrv/ Netive Inherited	View Ordered List
DynamicCompressionModule %windir%/System32/inetsrv/ Native Inherited	
uynamiciphistricionwodue swindirsksystemszynestry Native innered	Help
FailedRequestsTracingModule %windir%System32kinetsrVi Native Inherited	
FastCgiModule %windir%/System32inetsrv/i Native Inherited	
FileAuthorization System.Web.Security.FileAuth Managed Inherited	
FormsAuthentication System.Web.Security.FormsA Managed Inherited	
HttpCacheModule %windir%System32kinetsrv/ Native Inherited	
HttpLoggingModule %windir%/System32/intersv/L. Native Inherited	
HttpRedirectionModule %windir%System32kinetsrVs Native Inherited	
ISCertificateMappingAuthenti %winds/%/System32/inetsrv/ Native Inherited	
IpRestrictionModule %windir%/System32/inttsrv/i Native Inherited	
IsapFilterModule %windir%/System32/inetsrv/f Native Inherited	
IsapiModule %windir%/System32/inetsrv/i Native Inherited	
OutputCache System.Web.Caching.Dutput Managed Inherited	
Profile System.Web.Profile.ProfileMo Managed Inherited	
ProtocolSupportModule %windir%System32inetsrv Native Inherited	
RequestFilteringModule %winds%System32inetsrv Native Inherited	
RewriteModule %SystemRoot%system3Zin Native Inherited	
RoleManager System.Web.Security.RoleMa Managed Inherited	
ScriptModule-4.0 System.Web.Handlers.Script. Managed Inherited	
ServerSideIncludeModule ?liwindir%/System32/inetsrv/i Native Inherited	
ServiceModel System.ServiceModel.Activati Managed Inherited	
ServiceModel-4.0 System.ServiceModel.Activati Managed Inherited	
Sesion System Web-SesionState-Ser. Managed Inherited	
StaticCompressionModule Nonindi/WSystem32inetstv/ Native Inherited	
StaticFileModule Swindr%System32(inetsr/u Native Inherited UMAuthorization System Web Security UMAuth Managed Inherited	
Uklashnization System.Web.Sexvity.Uklash Managed Inherited Uklashnization	
UrlRoutingModule-4.0 System:Web/Routing.UrlRoutin_ Managed Inherited Web/DAIModule Swindir/System:22unetsr/ Native Inherited	
webookmindoue semiolinopatrocomenzation - native innerene Webookmindoue Semiolinopatrocomenzationes - Native inherited	
Webookeminoduk twenty type and the second se	
windowsauteriotation system retractions, windows windows in the system syst	
E Features View and Content View	



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 maxquerystring="8192"></requestlimits>	
<pre> <</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.		Â
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	-	×
rosoft Windows [Version 10.0.18363.778] 2019 Microsoft Corporation. All rights reserved.		
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	
	View Certificate
Certificate status: This certificate is OK.	
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.

Certr	ficate				
General	Details	Certification Pa	ath		
Show:	<all></all>		~		
Field			Value		^
1 To Ve	rsion		V3		
Se	rial numbe	er	0117271aac7a7a1	524	
G Sig	nature al	gorithm	sha256RSA		
Sig Sig	nature ha	ash algorithm	sha256		
📑 Iss	uer		ADSS Default Root	CA, Ascerti	
🛅 Va	lid from		16 January 2014 0	8:43:02	
🔄 Va	lid to		09 September 203	0 08:43:02	
- Colored Colo	hiert		ADSS Samples Tes	tCA Ascert	~
			Edit Properties	Copy to File	

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

÷	🐉 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, click Next.
_	Next Cance
÷	Next Cance
÷	
¢	Certificate Export Wizard Export File Format Certificates can be exported in a variety of file formats. Select the format you want to use:
¢	Certificate Export Wizard Export File Format Certificates can be exported in a variety of file formats. Select the format you want to use: O gER encoded binary X.509 (.CER)
4	Certificate Export Wizard Export File Format Certificates can be exported in a variety of file formats. Select the format you want to use: OER encoded binary X.599 (.CER) @ Bage 64 encoded X.599 (.CER)
¢	Certificate Export Wizard Export File Format Certificates can be exported in a variety of file formats. Select the format you want to use: O gER encoded binary X.509 (.CER)
÷	Certificate Export Wizard Export File Format Certificates can be exported in a variety of file formats. Select the format you want to use: DER encoded binary X.509 (CER) Bage 64 encoded X.509 (CER) Dgraphic Message Syntax Standard - PKCS #7 Certificates (P78) gradue all certificates in the certification path if possible
4	Certificate Export Wizard Export File Format Certificates can be exported in a variety of file formats. Select the format you want to use: DER encoded binary X.509 (.CER) Bage 54 encoded X.509 (.CER) Cgryptographic Message Syntax Standard - PKCS #7 Certificates (.P76)
4	
¢	Certificate Export Wizard Export File Format Certificates can be exported in a variety of file formats. Select the format you want to use: [p:R encoded binary X.599 (.CER) [p:Rencoded dinary X.599 (.CER) [p:rdude all certificates in the certification path if possible [p:rdude all certificates in the certification path if possible
÷	Certificate Export Wizard Export File Format Certificates can be exported in a variety of file formats. Select the format you want to use: OER encoded binary X.509 (CER) @ Bage 64 encoded X.509 (CER) Ogryptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogryptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificates (P7B) Ogriptographic Message Syntax Standard - PKCS #7 Certificat

6.3.6 Click Next.

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

← 🛿 🚱 Certificate 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 Browse	
Next C.	ancel

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

🗧 😺 Certificate Export Wizard	×
Completing the Certific	ate Export Wizard
You have successfully completed the You have specified the following setti	
File Name Export Keys	C:\sw\WebRA-v1.0-Win64-01Oct2019
Include all certificates in the certificates i	
File Format	Base64 Encoded X.509 (*.cer)
<	>
	<u>F</u> inish Cancel

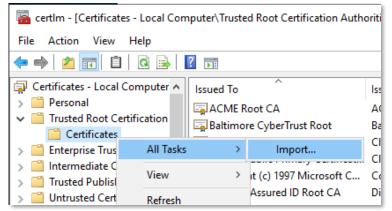
6.3.9 Click Finish to complete the root certificate export process.



6.4 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.

- 6.4.1 Launch certim.msc from the command prompt.
- 6.4.2 Expand the Trusted Root Certification Authorities folder from the left panel and right-click on Certificates. Now select All Tasks and then Import...



6.4.3 A certificate import wizard appears, Click Next to proceed.

🔶 🛿 Ertificate Import Wizard	×
Welcome to the Certificate Impo	rt Wizard
This wizard helps you copy certificates, certificate to lists from your disk to a certificate store.	rust lists, and certificate revocation
A certificate, which is issued by a certification author and contains information used to protect data or to connections. A certificate store is the system area v	establish secure network
Store Location Current User Local Machine	
To continue, dick Next.	
	<u>N</u> ext Cancel



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

bRA-v1.0-Win64-01Oct	t2019\setup\certs\Ro	ot CA.cer	Browse
e than one certificate ca	an be stored in a sing	e file in the follow	ving formats:
Information Exchange	- PKCS #12 (.PFX,.P:	12)	
raphic Message Syntax	Standard-PKCS #7	Certificates (.P7B))
t Serialized Certificate !	Store (.SST)		
e al	e than one certificate ca al Information Exchange graphic Message Syntax	e than one certificate can be stored in a sing al Information Exchange- PKCS #12 (.PFX,.P	ebRA-v1.0-Win64-01Oct2019\setup\certs\Root CA.cer e than one certificate can be stored in a single file in the follow al Information Exchange- PKCS #12 (.PFX,.P12) graphic Message Syntax Standard- PKCS #7 Certificates (.P7E ft Serialized Certificate Store (.SST)

6.4.5 Click Next to proceed.

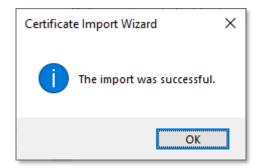
ADSS Web RA Installation Guide

Certifi	ate Store
Ce	rtificate stores are system areas where certificates are kept.
W	ndows can automatically select a certificate store, or you can specify a location fo e certificate.
	\bigcirc Automatically select the certificate store based on the type of certificate
	Place all certificates in the following store
	Certificate store:
	Trusted Root Certification Authorities Browse

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

÷	- 😺 Certificate Import Wizard	~
	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 Cer	tification Authorities
	Content Certificate	
	File Name C:\sw\WebRA-v1	.0-Win64-01Oct2019\setup\certs\R
	<	>
		<u>F</u> inish Cancel

6.4.7 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.



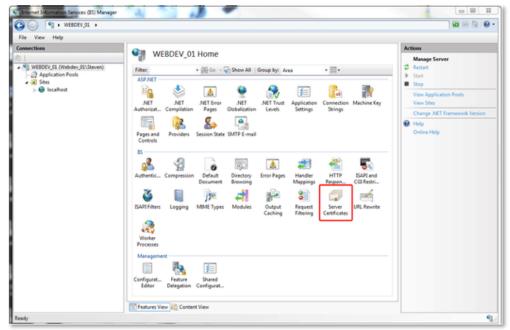
6.5 Generate a Self -Signed Certificate

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.

6.5.1 Launch the IIS Manager.

File View Help		
Connections	WEBDEV_01 Home Filter • @ Co • @ Show All Group by: Area • @ • Addroitant. Compiletion Peper Globalization Addroitant. Compiletion Net Firer Met Net Levels Pages and Providers Session State SMIP E-mail	Actions Manage Server Resta Start Stop Vew Application Peols View Stes Change .NET Framework Version Philp Online Help
	S Image: Configurate representation Default Directory Envertise Image: Configurate representation Authentice Compression Default Directory Envertise Image: Configurate representation Image: Configurate representation ISAPI Fitters Logging Image: Configurate representation Worker France Image: Configurate representation Image: Configurate represen	

6.5.2 Click the Server Name from the Server Connections.





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

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

Create 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:	
ОК	Cancel



6.5.5 Provide a meaningful name and press OK.

) Internet Information Services (IIS) Manager					
() () () () () () () () () () () () () (🖬 🖻 🔂 🔞 •
File View Help					
Connections	Server Ce Use this feature to requi Name Iocalhoutssl		e Web server can use with Web sit Issued By Webder,01	es configured for SSL. Expiration Date 2/20/2013 7:00	Actions Import Create Certificate Request Complete Certificate Request Create Domain Certificate Create Self-Signed Certificate PHop Online Help Online Help
	<	ment View		,	
Ready					• <u>1</u>

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.



6.6 Generate a CSR for an SSL Certificate

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

6.6.1 Launch certim.msc from the command prompt.

ᡖ certlm -	[Certificates - Local Computer\)	'ersonal]		-		×
File Action	n <u>V</u> iew <u>H</u> elp					
🗢 🔿 🖄	🖬 📋 🧟 🛃 🚺					
Certificati	es - Local Computer	 Object Type 				
V Trus	Find Certificates	There are no it	ems to	o show in this	view.	
> 📫 Ente	All Tasks >	Find Certificates				
🗸 🚞 Inte	View >	Request New Certificate				
	Refresh	Import				
> 🖺 Trus	Export List	Advanced Operations	>	Create	Custom	Request
> 🧾 Unt	Help			Manag	e Enrollr	ment Policies
> iii Thir > iii Truste	d People	ies				

6.6.2 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 used networks, protect content, establish identity, and do other security-related tasks.	to conne	ct to wire	eless
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			
_	N	-	
	Next	Can	cei

6.6.3 Press Next to proceed.

		-		×
📮 C	ertificate Enrollment			
	Select Certificate Enrollment Policy			
	Certificate enrollment policy enables enrollment for certificates based on predefine Certificate enrollment policy may already be configured for you.	d certificate	templates	5.
	Configured by you		Add Ne	w
	Custom Request Proceed without enrollment policy			
	E	<u>N</u> ext	Canc	el

6.6.4 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>○ c</u> mc	
	not available for certificates based on a custom certificate request, even when this the certificate template.	
	<u>N</u> ext Cance	4

6.6.5 Accept the default values and press Next without changing anything

		-	
tificate Enrollment			
ertificate Information			
lick Next to use the options already equest, and then click Next.	r selected for this template, or click Details to c	ustomize tł	ne certific
Custom request	i) STATUS: Available		Details
The following options describe Key usage: Application policies: Validity period (days):	the uses and validity period that apply to this		ificate: roperties
	[<u>N</u> ext	Car

6.6.6 Click Details and the Properties button will appear. Click Properties.

Certificate Properties		×
General Subject Extensions F	Private Key	
	e user or computer to which the ce e types of subject name and alterna	
Subject of certificate		
The user or computer that is re	ceiving the certificate	
Subject name:		
<u>T</u> ype:		bra.pki.acme.com
Full DN 🗸 🗸	Add > O=ACM	1E
<u>V</u> alue:	< Remove	
	- nemore	
Alternative name:		
Туре:	DNS	
DNS ~	webra.p	ki.acme.com
Val <u>u</u> e:	< bbA	
	Aug	
	< Remove	
	ОК С	Cancel <u>A</u> pply



6.6.7 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 certificat	e extensions for this certificate type.	^
Key usage		^
The key usage extension desc Available options: CRL signing Data encipherment Decipher only Encipher only Key agreement Key cettificate signing	ribes the purpose of a certificate. Selected options: Digital signature Key encipherme Non repudiation	nt
☑ Make these key usages crit	ical	
Extended Key Usage (applica	tion policies)	•
<u>B</u> asic constraints		· .
	OK Cancel	Apply

- **6.6.8** 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.

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

Certificate Properties		×
General Subject Extension	Private Key	
	ed enhanced key usage in Windows 2000) defines how a ect the application policy required for valid signatures of	^
Available options: Client Authentication Code Signing Secure Email Time Stamping Microsoft Trust List Signin Microsoft Time Stamping IP security unnel termina IP security tunnel termina IP security user	Add > Selected options: Add > Add >	l
Make the Extended Key	Usage critical	
Include Symmetric algori	hm 🗸	1
	OK Cancel Appl	¥ y



6.6.10 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 options	^
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	٣
Select Signature <u>F</u> ormat	~
Key germissions	~
OK Cancel	Apply

6.6.11 Press Next to proceed.

		-		Х
🔄 Certificate Enrollment				
Certificate Information				
Click Next to use the options request, and then click Next.	lready selected for this template, or click Details to cu	istomize th	ne certifica	ite
Custom request	i) STATUS: Available		Details	^
Key usage:	scrübe the uses and valiidity period that apply to this t Digital signature Key encipherment Non repudiation Server Authentication :		ificate: roperties	
	E	Next	Can	icel

6.6.12 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 lat to your hard disk or removable media. Enter the location and name of your certificate click Finish.			at
File Name:			
C:\sw\webra.pki.acme.com.req	B	owse	
File format: ● Base 64 ○ Binary			
	inish	Cano	:el

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

*** End of Document ***