VARIAN
medical systems

Varian Document Service
Installation Instructions and
Configuration Guide

ARIA® Oncology Information System

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Abstract	The *Varian Document Service Installation Instructions and Configuration Guide* provides installation information and procedures for the Varian Document Service software. This document is the English-language original.
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- International Classification of Diseases and for Oncology (ICD-O), 3rd edition, Geneva, World Health Organization, 2000.

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- International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10). Vols 1–3, Geneva, World Health Organization, 1992.

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Contents

Chapter 1   Installation and Configuration

Introduction

The Varian Document Service is an application programming interface (API) that can be used to import and retrieve Patient Documents from the ARIA$^{©}$ oncology information system (OIS). It runs as a web service, hosted by Microsoft Internet Information Services (IIS), and it is designed to handle requests originating from customized, in-house software.

Purpose of the Installation Guide

This guide provides a guideline for installing the Varian Document Service application.

Installation Requirements

The *Varian Document Service* is a standalone service that can be installed into environments configured for either ARIA$^{©}$ Practice Management or ARIA$^{©}$ MedOncology. It will typically be installed onto the same server as Varian Platform Services (OSP), but this is not a requirement. The service runs within an instance of Internet Information Services (IIS) and it runs independently of any other services installed on the same machine.

Note: *Varian Medical Systems, Inc., is not liable for errors made by others using these instructions and guidance.*

The installation requires knowledge of personal computers, its operating system and the ARIA$^{©}$ Practice Management 11.0 or ARIA$^{©}$ MedOncology 11.0 software and it's supporting hardware. This document is subject to change without notice.
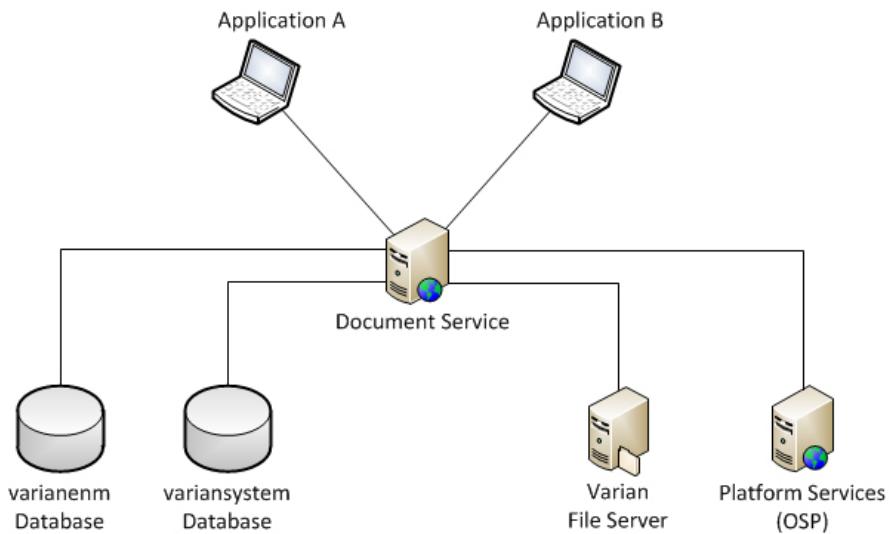
Figure 1   Varian Document Service and its Dependencies

ARIA OIS

The Varian Document Service is designed to run in an environment where either ARIA© Practice Management 11.0 or ARIA© MedOncology 11.0 is already configured. It can also function under hybrid environments where both of these solutions are installed in what is known as ARIA© Comprehensive Cancer Solutions (CCS).

Hosting Requirements

The following is a list of components that are required by the machine which will host this web service:

- Windows Server version 2003 or later
- Microsoft .NET 4.0 application framework
- Microsoft Internet Information Services (IIS) 6.0 or greater, with the following components:
  - Web Management Tools
    - IIS 6 Management Compatibility
    - IIS Management Console

- WWW Services
    - App Development Features
        - .NET Extensibility
        - ASP .NET

Dependencies

This web service also depends upon several other Varian products. The exact products it depends upon varies based on whether this service is being configured for ARIA MedOncology or ARIA Practice Management.

ARIA Practice Management Dependencies

- Varian Platform Services (OSP)
    - Used to locate the file server and databases as well as for authenticating users
- Varian File Server
    - Used to store and retrieve document files
- *Varianenm* database
    - Used to store and retrieve the metadata associated with documents.
- *Variansystem* database
    - Used to retrieve patient data that such as billing accounts, primary oncologists, etc.

ARIA MedOncology Dependencies

- *Varianenm* database
    - Used to store and retrieve the documents and patient data.

Note: *These dependencies do not need to be installed on the same server as the Document Service, they only need to be made available to that server.*

Note About Security Considerations: *The Document Services exposes a web service interface over IIS which requires HTTPS for all communications. Even though this service is secure, it should always be configured **within** an organizations firewall and never exposed over a WAN. Doing so may violate certain healthcare or privacy laws in your area.*

Installation

The entire installation package is contained in a single MSI. This package is to be installed onto the server where the service is expected to run (typically this is also the server that hosts Varian Platform Services). Refer to "Hosting Requirements" on page 8 before continuing to ensure that the server meets the minimum requirements and that it has IIS configured properly.

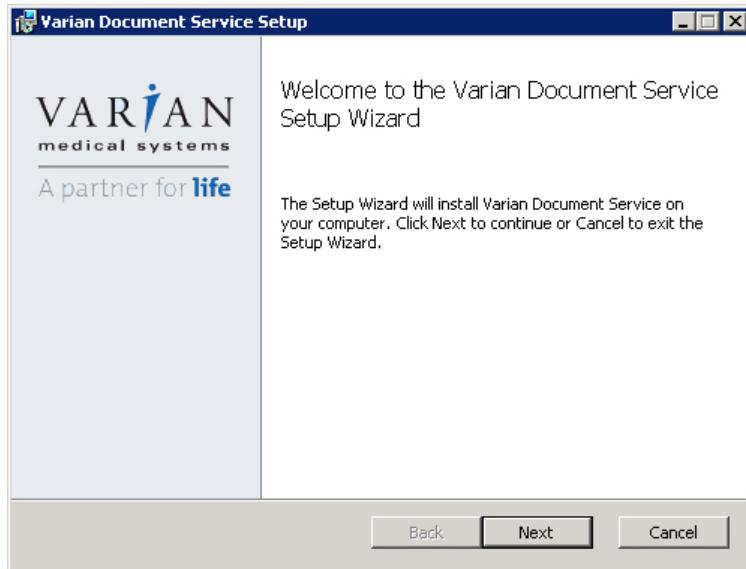1. Begin by launching the MSI installation package on the server.

Figure 2   Welcome Dialog

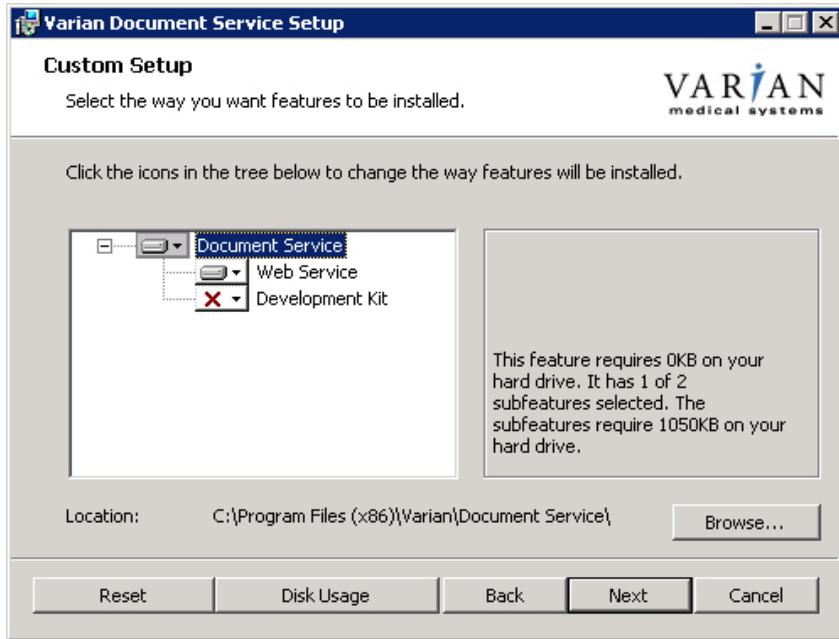2. Press the **Next** button to continue.

Figure 3 Feature Selection Dialog

You will be presented with a dialog where you can select which components to install. The Web Service component is mandatory so your only option is whether or not to install the Development Kit.

The Development Kit contains the following components:

- .NET Library – a few DLLs which can be integrated into .NET solutions in order to access the Document Service programmatically.
- Command-Line Tool – an executable which can be used to access the Document Service from the command-line.
- Testing Tool – a tool which can be used to test the Document Service. It allows users to gain some exposure to how the service works and try out certain functions.

You also have the option of changing the installation directory from this dialog.

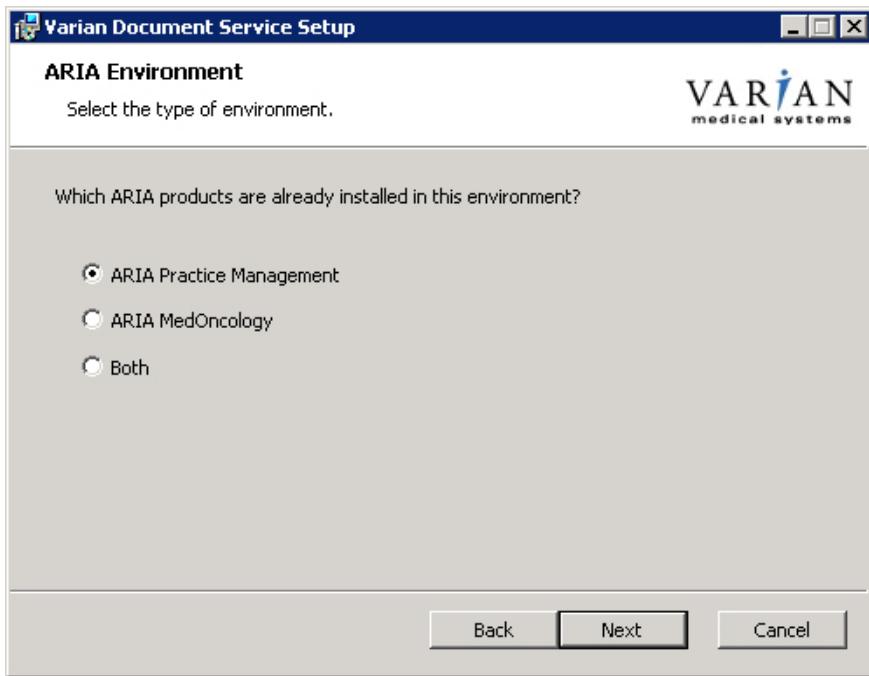3. Press the **Next** button to continue.

Figure 4   Environment Selection Dialog

You will now be prompted for the type of environment that this service should be configured for:

- ARIA Practice Management – select this environment if only ARIA Practice Management is installed at the organization
- ARIA MedOncology – select this environment if only ARIA MedOncology is installed
- **Both** – select this option if both ARIA Practice Management and ARIA MedOncology are installed in what is called a CCS setup

4. Select the appropriate environment and then press the **Next** button to continue.
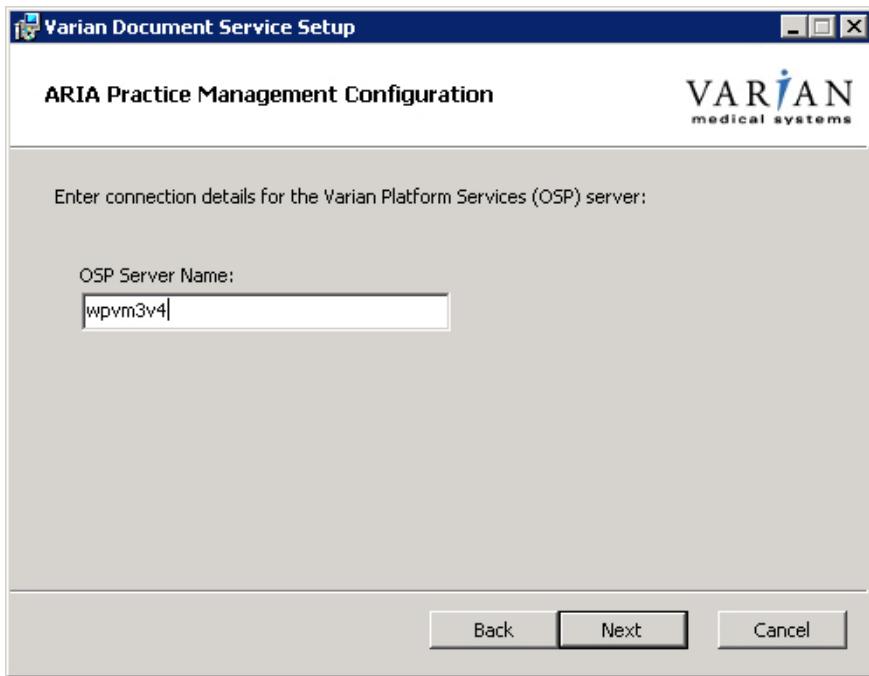
Figure 5   ARIA Practice Management Configuration Dialog

If *ARIA Practice Management* or *Both* was selected as the environment then you will only need to enter the Varian Platform Services (OSP) server name.
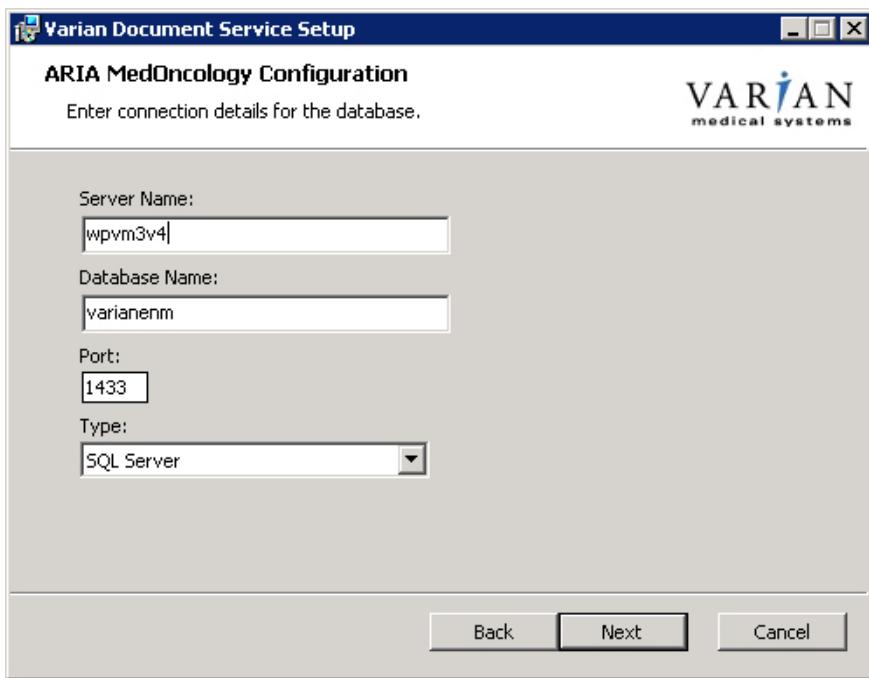
5. Click **Next**.

Figure 6   ARIA MedOncology Configuration Dialog

If *ARIA MedOncology* was selected as the environment, then enter the connection details for the *varianenm* database.

6. Enter the server name, database name, port, and database type.
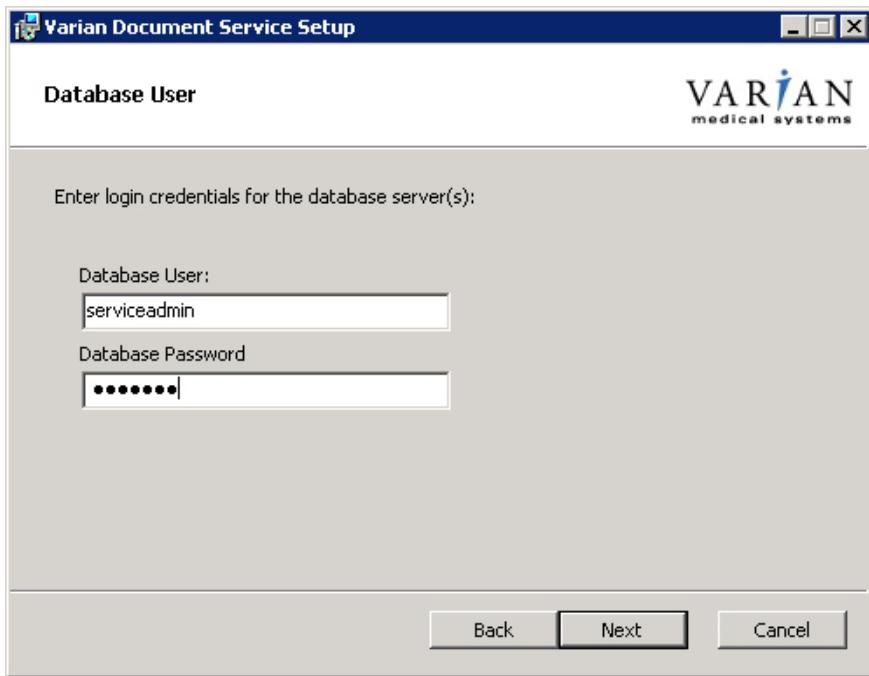
7. Click the **Next** button.

Figure 7   Database User Credentials Dialog

Regardless of which ARIA environment was selected, you will now be required to enter login credentials for the database. It is suggest that you use the *serviceadmin* account and simply enter the password. However, you may use any other user instead who has sufficient database rights to add and drop stored procedures.

8. Click the **Next** button to continue.

At this point, the database and/or OSP settings will be validated. If they are not valid you will receive a message indicating that there was a problem connecting to the database. If this happens, check the details on the previous two screens and try again. If you still cannot continue, check the log file by pressing the View Log button in the warning dialog.
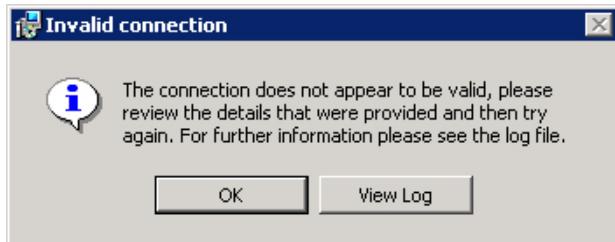
Figure 8 Message Indicating a Problem Occurred While Connecting to the Database

Assuming the settings were correctly validated, you will be prompted for a port that the web service interface should be exposed over.
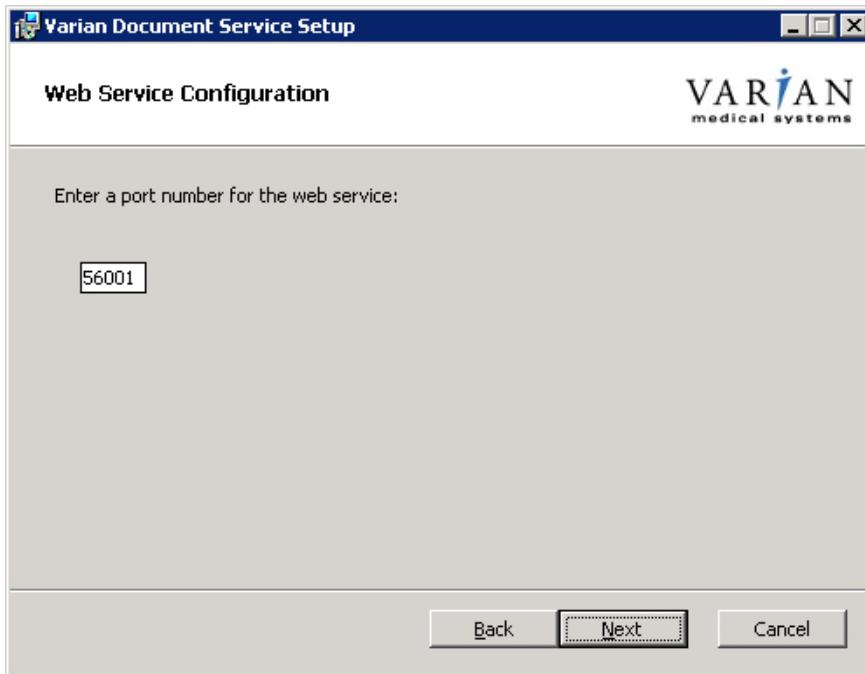

Figure 9 Port Selection Dialog

9. Enter an unused, inbound TCP port for the web service. Click the **Next** button to continue.

To determine an unused, inbound TCP port for the web service, open a command prompt and launch the "netstat" command to see unused ports. Verify that the default port, 56001, is not in the list of used ports. If it is, select an alternative port.
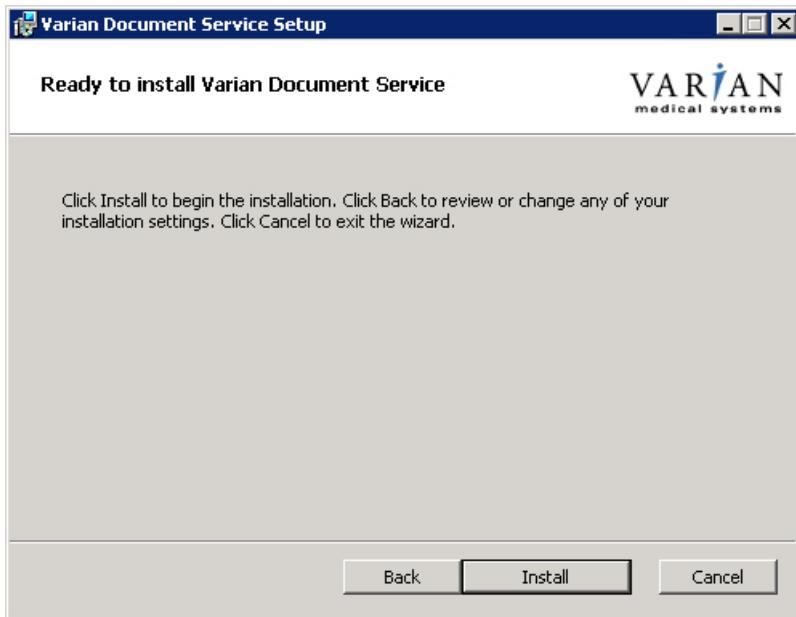

Figure 10   Final Confirmation Dialog

A final confirmation dialog should appear.

10. Click the **Install** button to install the Document Service onto the server.
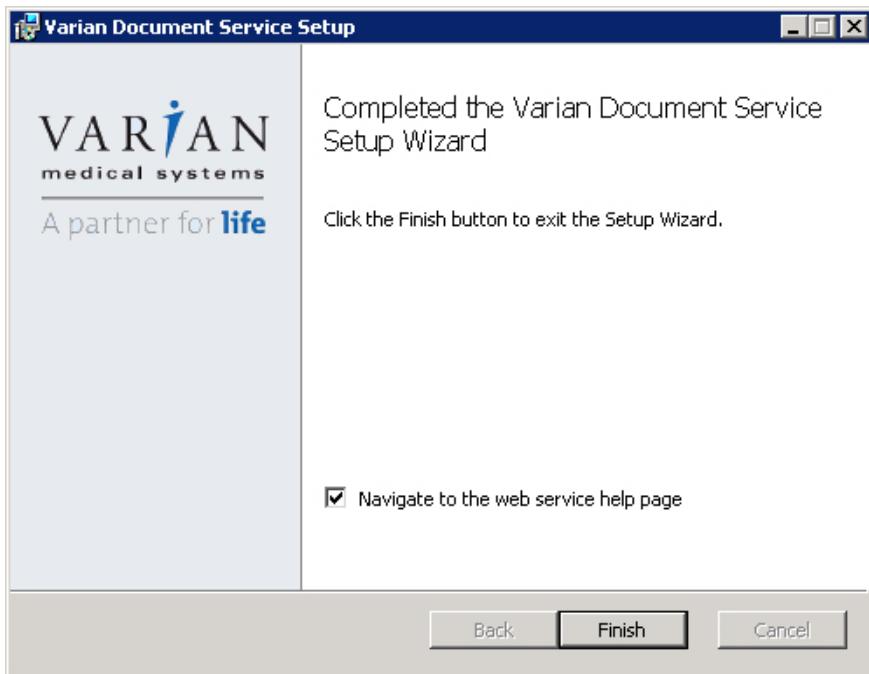
Figure 11 Successful Installation Dialog

If the service was installed successfully, then the exit dialog above will be shown. It is recommended that you leave *Navigate to the web service help page* option checked off.

11. Click **Finish**.

The *Navigate to the web service help page* option will cause Internet Explorer to be launched with the URL of the web services help page. This page gives a good indication of whether or not the service is running properly. If the help page does not appear correctly, refer to the *Troubleshooting* section below.

Figure 12 Document Service Help Page

12. (Optional) To further verify that the service is working properly, launch the *Testing Tool* from **Start** -> **All Programs** -> **Varian** -> **Document Service** -> **Testing Tool**.
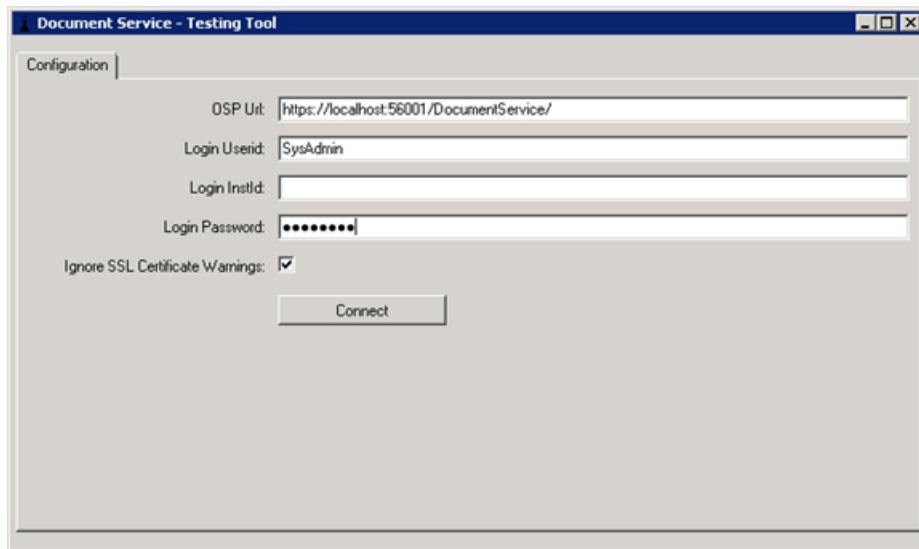
Figure 13   Testing Tool

13. (Optional) Enter in the URL of the service, as well as a user id and password of a user belonging to the System Administrator group (for ARIA MedOncology users consult the User Guide for the requirements):

   https://<servername>:<port>/DocumentService/

14. (Optional) Click the **Connect** button and verify that the following prompts appear:
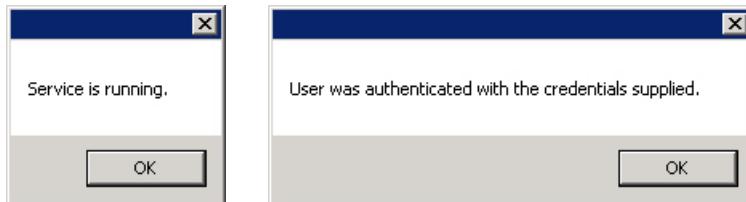
Figure 14   Prompts Indicating that the Service is Running

This means that the service is both running correctly and that the user that you provided was successfully authenticated.

Removal

To remove the Document Service, locate *Varian Document Service* in the Programs and Features section of the Windows control panel.
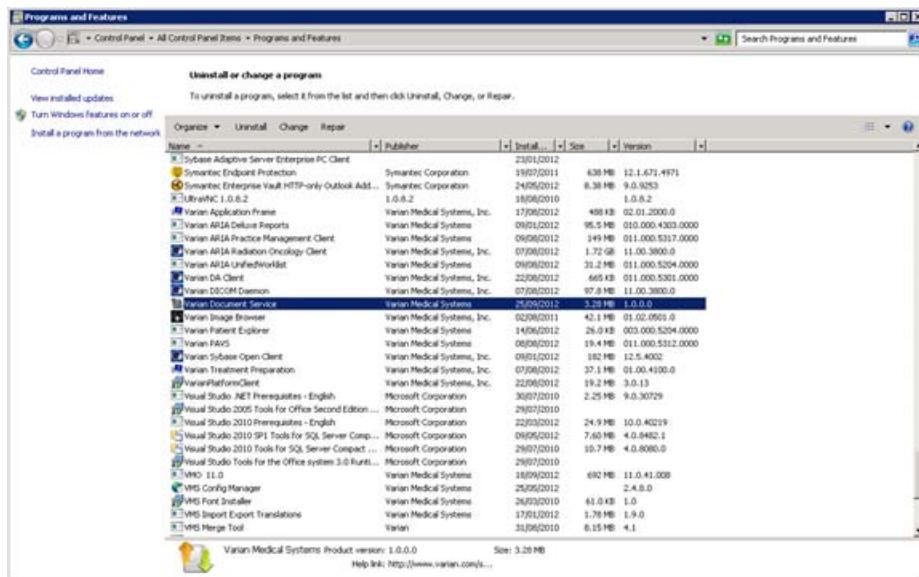
Figure 15   Locating the Varian Document Service in the Programs and Features Section

1. Right click the *Varian Document Service* entry and select **Uninstall**.

   This will completely remove the Document Service from the machine.

Note: *The Document Service can also be uninstalled by re-running the same MSI package and clicking the Remove button when prompted for an action.*

Troubleshooting

Below are troubleshooting techniques for Varian Document Service.

The installation process fails

Check the log file at the following location:

```
%TEMP%\DocService.Install.log
```

This will contain the log for a custom action that is executed as part of the install. This action is responsible for connecting to the database, installing stored procedures, and configuring some parts of IIS. It will include any exceptions that were encountered.

If this does not yield anything useful, then run the MSI with logging enabled by executing the following command from a command prompt:

```
msiexec /i SetupDocumentService.msi /l*v Log.txt
```

Check the log file *Log.txt* for any errors.

The service will not start

Navigate to the URL below, replacing <host name> with the name of the hosting server and <port> with the value that was chosen during the install (typically 56001):

```
https://<host name>:<port>/DocumentService/help
```

A help page will display if the service is running. If the service is not running then an error page will typically be displayed. This error page often contains useful information which can be used to locate the source of the problem in IIS.

The service starts but it does not appear to work properly

If the service appears to start (i.e., you can navigate to the help page without any issue as discussed above) but the service does not seem to be working properly, then launch Windows Explorer and open the following folder:

```
C:\VMSOS\Log\Application\DocumentService
```

Check for a log file in this folder. It will contain a log of all exceptions encountered by the web service as it is running.

Security certificate warnings

This service uses self-signed certificates, so certificate warnings are to be expected. These warnings appear because the web service's certificate in IIS is not from a certificate authority that the client application trusts. This does not mean that the HTTPS connection is compromised, the connection is still fully encrypted, this simply

means that the web browser (or whatever client application is connecting to the service) was not able to verify the certificate via a third-party certificate authority (another server).

There are a few ways around these warnings:

1. Ignore the certificate warnings altogether:

   a. This is a perfectly reasonable solution if your service is located within a LAN and never exposed over the internet. It simply means that your client applications implicitly trust that they are connecting to the real Document Service and not to an imposter, a reasonable assumption within a LAN.

2. Download the client certificate and install it into the Root Certification Authorities certificate store on the client machines:

   a. This is a reasonable solution if only a few client machines will be connecting to the server.

   b. This can be done from Internet Explorer by browsing to the help page

   c. https://<host name>:<port>/DocumentService/help, clicking on the Security Shield near the URL, viewing the certificate, then installing it onto the machine. The certificate should be installed into the *Trusted Root Certification Authorities* store.

3. Create a new certificate via a certification authority server which the client machines already trust

   a. Servers can be set up to act as a certification authority, and these can be used to create a new certificate that is linked to the Document Service's host name and port

   b. This certificate can be imported into IIS under Server Certificates page and then linked to the web service by editing its HTTPS Binding and selecting the new certificate

Finally, it is worth noting that even if a certificate is installed, the URL that is used to access the service must always match the domain to which the certificate was issued. So, if a certificate is issues to *ABC.domain.com*, then the URL used to access the service must always be:

```
https://ABC.domain.com:<port>/DocumentService
```

Using the machine name without the domain, the IP address, or a hostname like *localhost* would result in a certificate warning because of the mismatch.

Changing the Configuration After Installation

It is probably easiest to just reinstall the service in order to change the configuration, but if you would like to tweak a server name or something like that it is easy enough. The only settings for this service are located in the following file:

```
<install folder>\Web Service\Web.config
```

Typically this maps to the following folder:

```
C:\Program Files (x86)\Varian\Document Service\Web Service\Web.config
```

The only nodes that are of interest should be the following:

```
<add key="mockMode" value="false"/>
<add key="ospSystem" value="OSP8"/>
<add key="ospUri"
value="http://servername:56001/OSPServices/ServerSe
ttings.svc"/>
<add key="enmDbServerName" value=""/>
<add key="enmDbServerDbName" value="varianenm"/>
<add key="enmDbServerPort" value="1433"/>
<add key="enmDbServerType" value="SQL Server"/>
```

The configuration properties are as follows:

- mockMode – this is mainly to used for internal testing purposes; it will cause the service to enter a mode where it returns fake data rather than real data, for testing purposes.
- ospSystem – the internal version of Varian Platform Services that is used, this should always be left as "OSP8".
- **ospUri** – if this service is being configured for ARIA Practice Management then this should be set to the URL of the OSP web services. Generally this will be of the form http://<server_name>:56001/OSPServices/ServerSettings.svc. This value should be left blank if this service is being configured for ARIA MedOncology (where this is no OSP server.)
- enmDbServerName – this only needs to be populated at ARIA MedOncology sites where an OSP Server is not available. It should contain the host name of the server containing the varianenm database.
- enmDbServerDbName – this only needs to be populated at ARIA MedOncology sites where an OSP Server is not available. It should contain the varianenm database name (typically "varianenm").

- enmDbServerPort – this only needs to be populated at ARIA MedOncology sites where an OSP Server is not available. It should contain the port on which the varianenm database is running. This is often "1433" for SQL Server databases and "5000" for Sybase databases.
- enmDbServerType – this only needs to be populated at ARIA MedOncology sites where an OSP Server is not available. It should contain the database type, either "Sybase" or "SQL Server".

Note: *You will need to restart the Document Service application in IIS after modifying the Web.config file in order for the changes to take effect.*

Glossary

Abbreviations

Abbreviation	Explanation
CCS	ARIA$^{©}$ Comprehensive Cancer Solutions
DLL	Dynamically Linked Library; a shared code library that can be used by Windows applications.
ENM	Refers to the varianenm database.
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
JSON	JavaScript Object Notation
MO	Medical Oncology; typically used to refer to ARIA© MedOncology
REST	Representation State Transfer (interface)
RO	Radiation Oncology; typically used to refer to ARIA© Practice Management
SSL/TLS	SSL stands for Secure Sockets Layer and TLS stands for Transport Layer Security. SSL/TLS is a hybrid mode where the version which is used is negotiated for each connection based upon the highest level that the client supports.

Abbreviation	Explanation
URL	Uniform Resource Locator
WAN	Wide Area Network

Definitions

Term	Definition
ARIA MO	ARIA© MedOncology suite of applications
ARIA PM	ARIA© Practice Management suite of applications
CCS	ARIA© Comprehensive Cancer Solutions. A solution offered by Varian which involves both the ARIA PM and MedOnc suite of applications. The applications are configured to use the same varianenm database.
JSON	JavaScript Object Notation; a data interchange format that is somewhat like XML, only much more compact.
MedOnc	Abbreviation for ARIA MO (see above)
RadOnc	Abbreviation for ARIA PM (see above)
REST Service	A web service interface where the URL path describes in large part what resource is being requested or modified. Standard HTTP methods such as GET, POST, PUT, or DELETE are used to modify the resources.
varianenm	Refers to the varianenm database, used by both ARIA PM and ARIA MO
variansystem	Refers to the variansystem database, used by ARIA PM

Chapter 2   Contacting Varian Customer Support

Varian Customer Support is available on the internet, by e-mail, and by telephone. Support services are available without charge during the initial warranty period.

The my.varian.com website provides contact information, product documentation, and other resources for all Varian products.

Get Online Customer Support

You can browse the my.varian.com site without having a Varian account or logging in. However, you must have a Varian account to get online customer support and to access product information for products at your institution or clinic.

1. Go to **http://my.varian.com**.

2. Click **Contact Us** at the top of the window to display customer support and training options, and international e-mail addresses and telephone numbers.

3. Choose an option:

   ■ If you do not already have an account, click **Create New Account** and follow the instructions.

     Establishing an account may take a few days.

   ■ If you have an account, go to the next step.

4. Enter your user name and password.

5. Browse the information and then click the link that corresponds to what you want to do:

   ■ Fill out and submit a support request.

   ■ Find documents.

     Online documents in PDF format include customer technical bulletins (CTBs,) manuals, and customer release notes (CRNs).

- Send an e-mail to Varian support.

  You can browse for international e-mail addresses and telephone numbers by geographic area, and for oncology-specific contacts such as for brachytherapy.

- Find parts and services by geographic area.

E-Mailing Varian

Send e-mail inquiries through the my.varian.com website.

Alternatively, you can use a support e-mail address that corresponds to your location or interest:

Location	E-mail Address
North America	support-americas@varian.com
Latin America	soporte.al@varian.com
Europe	support-emea@varian.com
Australia and New Zealand	support-anz@varian.com
China	support-china@varian.com
Japan	support-japan@varian.com
South East Asia	support-sea@varian.com
Brachytherapy Systems	brachyhelp@varian.com

Ordering Documents by Phone

You can order documents by phone by calling Varian Medical Systems support.

Location	Telephone Number
North America	+ 1 888 827 4265 (Press 2 for parts)
Global	Call your local Varian office.