

The Web Server Module

User Guide

Copyright © 2022 [Santesoft LTD](#), all rights reserved

Table of Contents

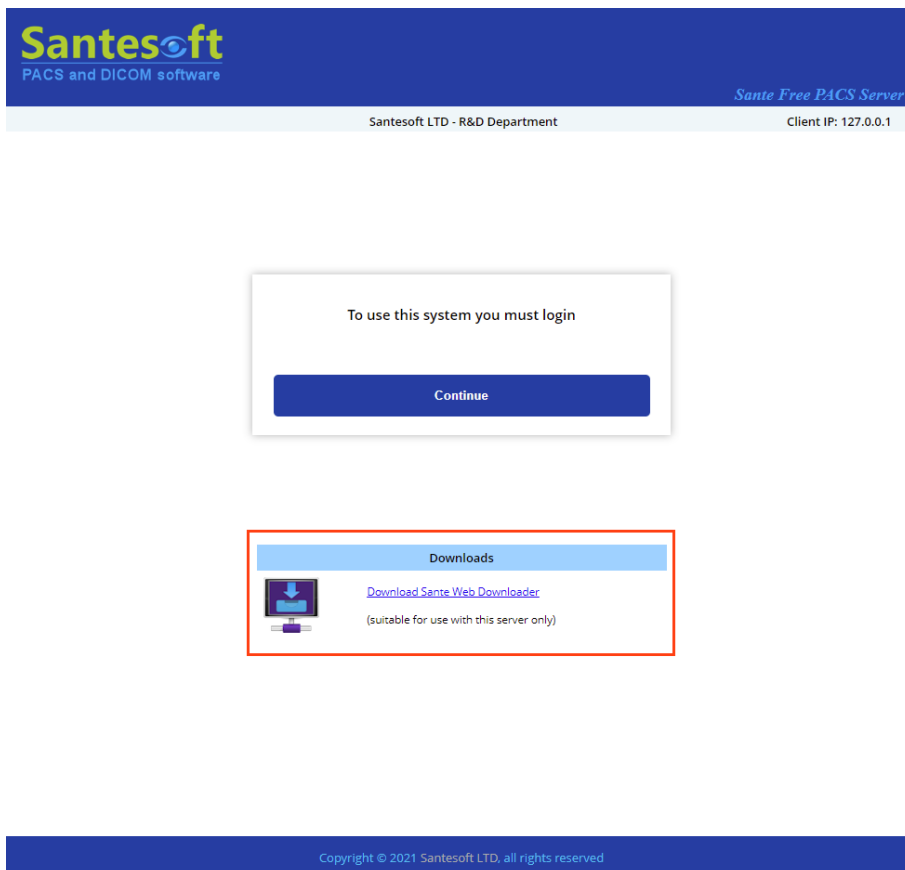
Overview	2
Free Application	2
Configure the HTTP Server	3
Enable SSL Encryption	4
How to use the server	5
Add Server User	6
Server Activity	9
Remote connection with an internet browser	12

Overview

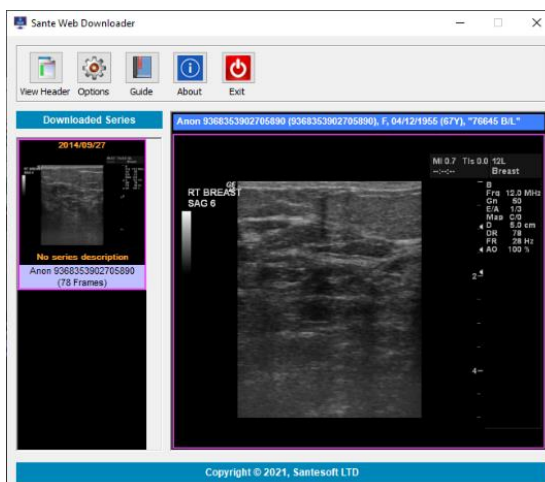
The Web Server module lets remote users of the system to connect with it, query and retrieve studies that have been stored in the database of the DICOM Server. The Web Server module, for these connections, uses the HTTP protocol of the internet and the remote user must use a web browser like **Edge**, **Chrome** or **Mozilla** to query and retrieve studies.

Free Application

The remote user, from the initial web page of the web server can download and install a free application for use with this server, Sante Web Downloader.



Sante Web Downloader lets the user to inspect the downloading procedure. In the end of receiving Sante Web Downloader saves the received studies in a Zip file. The user can configure Sante Web Downloader to open the saved zip file with a DICOM Viewer of his/her choice like Sante DICOM Viewer Pro or Sante DICOM Editor. The DICOM Viewer must support opening zip files from command line. For more information please read the **User Guide** of Sante Web Downloader.



Sante Web Downloader

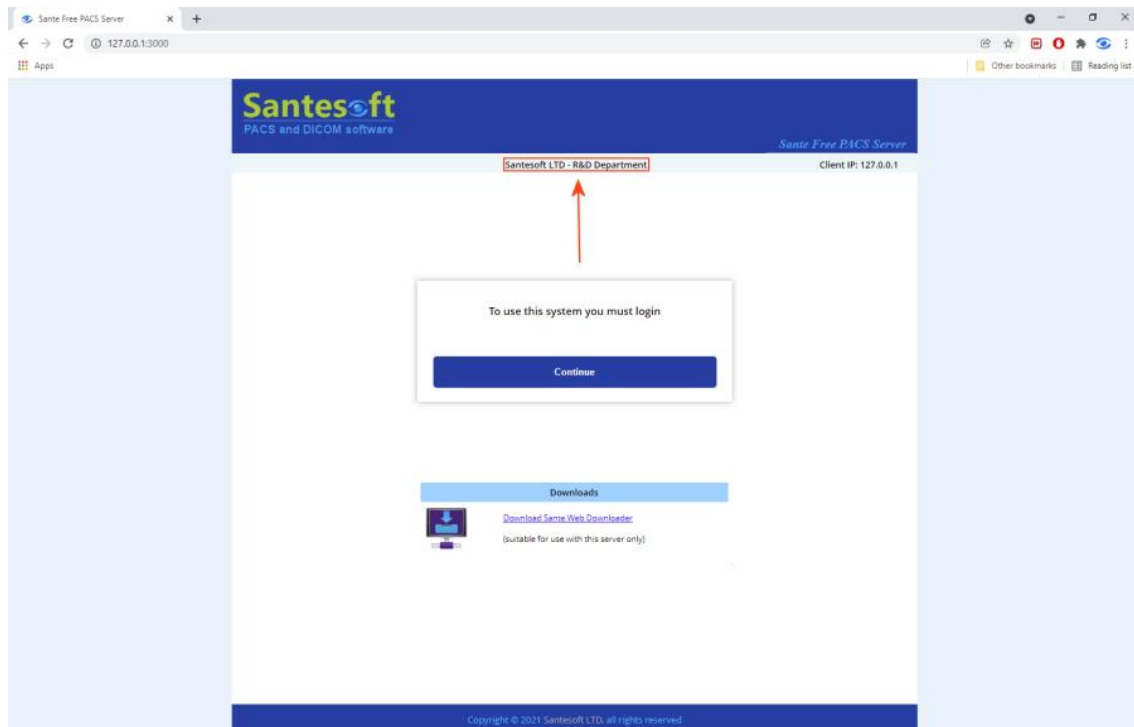
Configure the HTTP Server

Select the menu command "**Network** ➔ **HTTP Server Setup**".

A dialog box appears and lets the user to configure the HTTP server module.

Institution, Department

This information appears on the web page of the server and informs the user with which server he has been connected.



Internet IP Address (True IP)

The internet IP address is received automatically from the internet service provider and it is the address with which the HTTP server goes to the internet. The user cannot change it.

Web IP Port

With this port the HTTP server goes to the internet. If the number of the Web port is equal to 0 the program does not open the port and the program cannot communicate with web clients. The port number 0 can be used if the user wants the HTTP server module to be disabled.

ATTENTION!

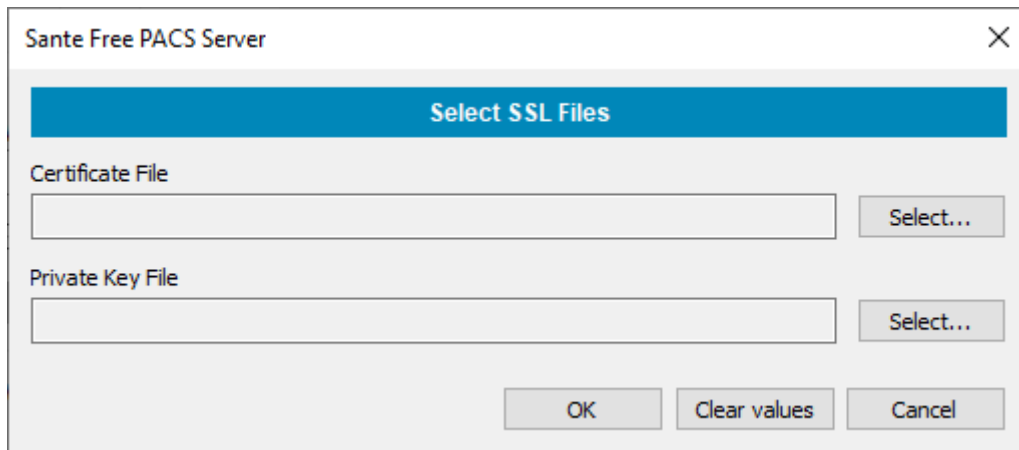
The Web IP port of the HTTP server must be forwarded by the router!

Enable SSL Encryption

Because of the critical data contained in the server it is **strongly** recommended the HTTP server module to be used with the SSL encryption enabled and if it is possible only within VPN connections.

To get an SSL Certificate, the user must have a valid **ICAN** (Internet Corporation for Assigned Names) server name like **santesoft.com**.

When the user checks the **Enable SSL Encryption** checkbox, the program asks for the certificate file (.crt) and the private key file (.key) that the user has received from the SSL Certificate provider of his choice.



The screenshot shows a dialog box titled "Sante Free PACS Server" with a close button (X) in the top right corner. The dialog has a blue header bar that says "Select SSL Files". Below the header, there are two sections: "Certificate File" and "Private Key File". Each section has a text input field and a "Select..." button to its right. At the bottom of the dialog, there are three buttons: "OK", "Clear values", and "Cancel".

Update Web Server button

If one or more of above information has been changed, the user must restart the HTTP server module by pressing the **"Update Web Server"** button.

How to use the server

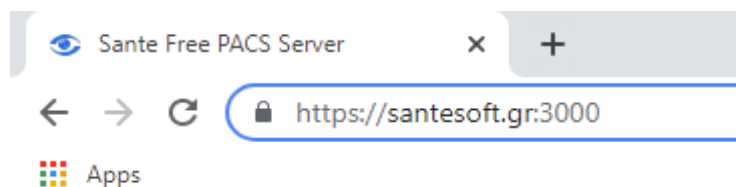
The user must use a web browser like **Edge**, **Chrome** or **Mozilla** to communicate with the web server.


If the SSL Encryption is enabled

The user must put in the address bar of the browser (Edge, Chrome or Mozilla) the server's ICAN name followed by a colon and the selected port. The protocol must be the encrypted https:// protocol.

e.g.

https://santesoft.gr:3000



Please note the padlock symbol  before the name of the server. That means that the encrypted protocol is used.

The local IP Address (e.g. 192.168.1.10) or the localhost IP Address 127.0.0.0 do not work because the encrypted https:// protocol requires a valid server name.

https://192.168.1.10:3000 (does not work)

https://127.0.0.1:3000 (does not work)

Also the simple protocol **http://** (without "s") does not work

http://santesoft.gr:3000 (does not work)

http://192.168.1.10:3000 (does not work)

http://127.0.0.1:3000 (does not work)

If the SSL Encryption is not enabled

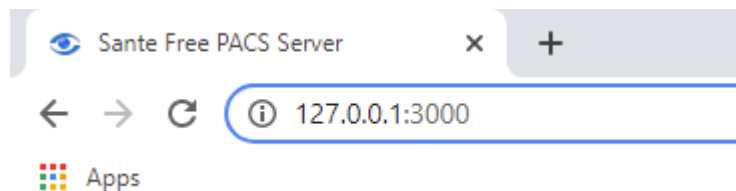
The user must put in the address bar of the browser (Edge, Chrome or Mozilla) the server's ICAN name, the local IP Address (e.g. 192.168.1.10) or the localhost IP Address 127.0.0.0 followed by a colon and the selected port. The protocol must be the simple http:// protocol.

e.g.

http://santesoft.gr:3000

http://192.168.1.10:3000

http://127.0.0.1:3000



Also the encrypted protocol **https://** (with "s") does not work

https://santesoft.gr:3000 (does not work)

https://192.168.1.10:3000 (does not work)

https://127.0.0.1:3000 (does not work)

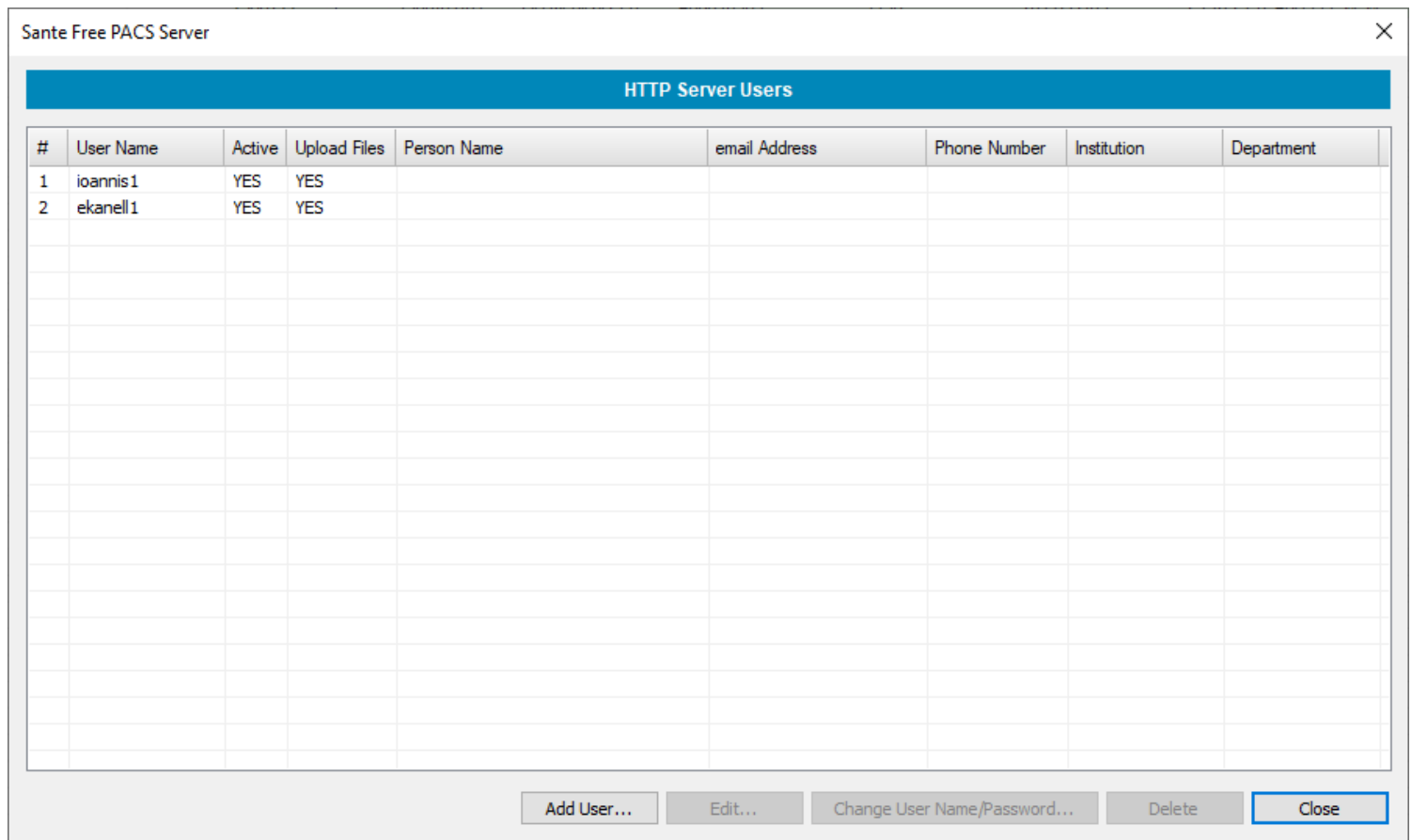
ATTENTION!

We strongly discourage the use of the server with the SSL Encryption disabled. In that case it must be used only with VPN connections.

Add Server User

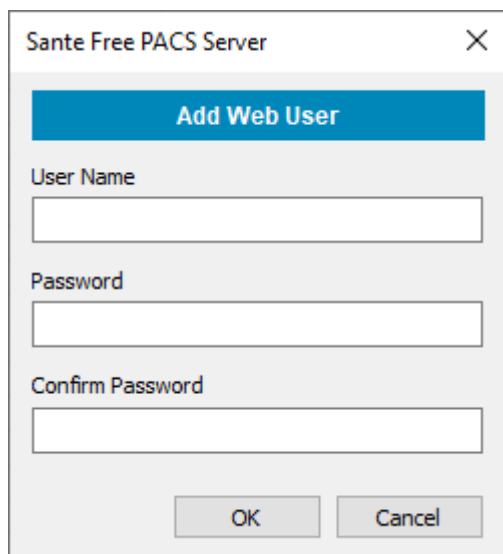
Select the menu command "**Network** ➔ **HTTP Server Users**".

A dialog box appears and lets the user to add, edit, modify, delete and review the users of the HTTP server module.



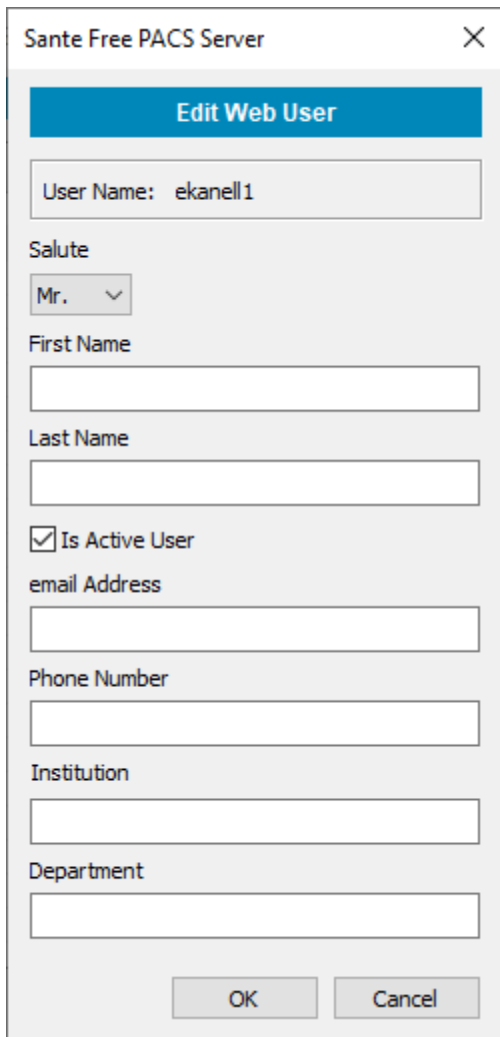
Add User button

By pressing this button, a dialog box appears and lets the user to insert the **User Name** and the **Password** of the web user. The user name must be unique and it must not exist already. The password must be at least of 8 character and it is **strongly** recommended the rules of selecting a strong password to be followed. That means the password must be a mix of lowercase and uppercase numbers and symbols.



Edit button

This button is enabled when the user has select a row of the HTTP Server User list and lets the administrator to add more useful information about the web user like the real name of the web user and his/her contact information.



The screenshot shows a dialog box titled "Sante Free PACS Server" with a close button (X) in the top right corner. Below the title bar is a blue header with the text "Edit Web User". The main area contains several input fields and a checkbox:

- User Name: ekanell1
- Salute: Mr. (dropdown menu)
- First Name: (empty text box)
- Last Name: (empty text box)
- Is Active User
- email Address: (empty text box)
- Phone Number: (empty text box)
- Institution: (empty text box)
- Department: (empty text box)

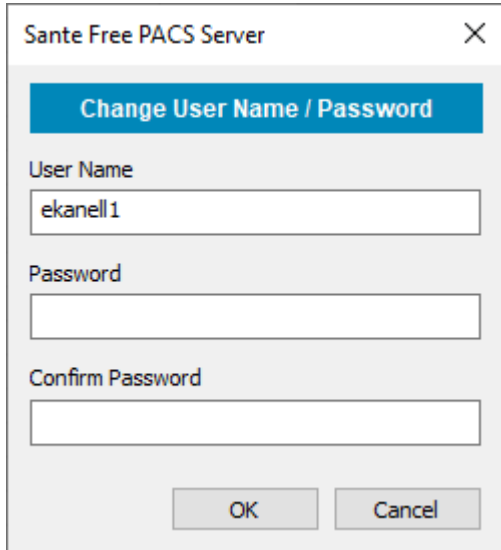
At the bottom of the dialog are two buttons: "OK" and "Cancel".

"Is Active User" option

With this option the administrator can permit or prohibit the login of the user into web server, temporarily or permanently.

Change User Name/Password button

By pressing this button, a dialog box appears and lets the user to change the **User Name** and the **Password** of a web user. The password must be at least of 8 character and it is **strongly** recommended the rules of selecting a strong password to be followed. That means the password must be a mix of lowercase and uppercase numbers and symbols. This button is enabled when the user has select a row of the HTTP Server User list.



The image shows a dialog box titled "Sante Free PACS Server" with a close button (X) in the top right corner. Below the title bar is a blue button labeled "Change User Name / Password". Underneath this button are three text input fields: "User Name" containing the text "ekanell1", "Password" (empty), and "Confirm Password" (empty). At the bottom of the dialog box are two buttons: "OK" and "Cancel".

Delete button

This button deletes a web user from the list and it is enabled when the user has select a row of the HTTP Server User list.

The list **“Recent Web Connections”** displays the users and their activity that were connected with the server the current day and their connection has been closed.

Recent Web Connections									
#	User Name	IP	Browser	Session ID	Date	Time	Connection Duration	Data Received	Data Sent
1	ioannis1	[REDACTED]	Google Chrome	ubQS4KNovyvf	2021/12/17	11:44:31	00:20:42	6.148 KB	261.157 KB
2	ioannis1	[REDACTED]	Sante Web Viewer	voDbHIcQYpGs	2021/12/17	11:47:15	00:00:03	2.063 KB	1025.261 KB
3	ioannis1	[REDACTED]	Google Chrome	tA3WfYn28yM	2021/12/17	11:40:41	00:03:38	12.949 KB	760.627 KB
4	ioannis1	[REDACTED]	Google Chrome	to81I0iC3kxN	2021/12/17	11:40:43	00:03:44	9.854 KB	231.885 KB

If the user wishes to review all the connections of the web server module must use the menu command **“Report → HTTP Sever Report”**. The dialog box that appears displays all the connections of the server.

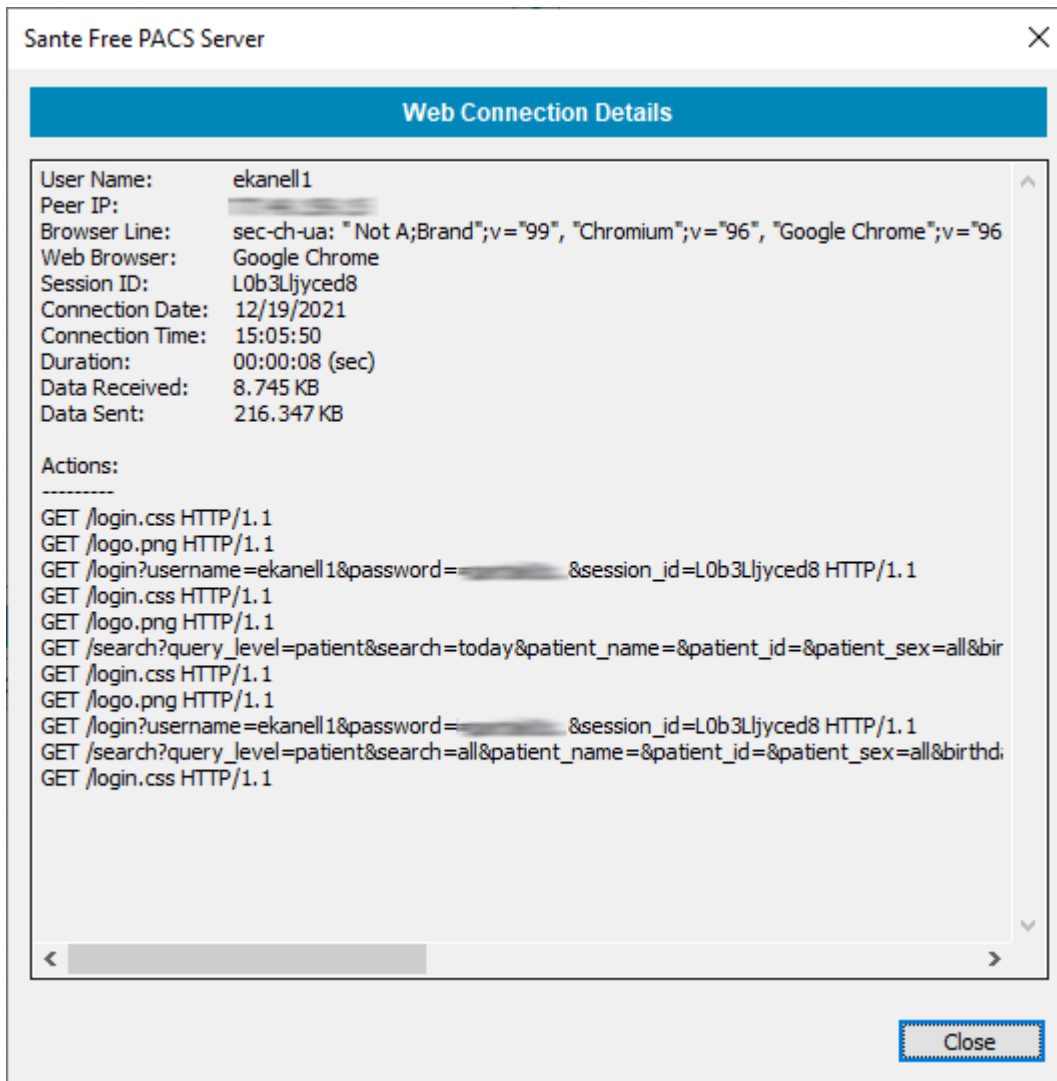
Sante Free PACS Server
✕

HTTP Sever Report

#	User Name	Connection IP	Session ID	Connection Date	Connection Time	Connection Duration
1	ioannis1	[REDACTED]	to81I0iC3kxN	2021/12/17	11:40:43	00:03:44
2	ioannis1	[REDACTED]	tA3WfYn28yM	2021/12/17	11:40:41	00:03:38
3	ioannis1	[REDACTED]	voDbHIcQYpGs	2021/12/17	11:47:15	00:00:03
4	ioannis1	[REDACTED]	ubQS4KNovyvf	2021/12/17	11:44:31	00:20:42

Today
Yesterday
Last 7 Days
All
Delete
Close

To get a detailed report about every connection in all the three above lists, the user must double-click on the desired row. A dialog box appears and displays all the activity of the web user.



Sante Free PACS Server [X]

Web Connection Details

User Name: ekanell1
Peer IP: [REDACTED]
Browser Line: sec-ch-ua: " Not A;Brand";v="99", "Chromium";v="96", "Google Chrome";v="96"
Web Browser: Google Chrome
Session ID: L0b3Ljyced8
Connection Date: 12/19/2021
Connection Time: 15:05:50
Duration: 00:00:08 (sec)
Data Received: 8.745 KB
Data Sent: 216.347 KB

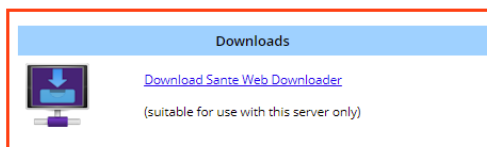
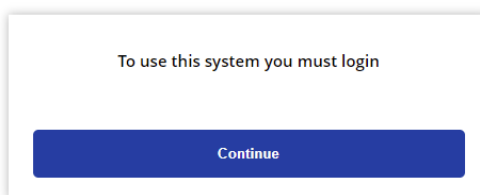
Actions:

GET /login.css HTTP/1.1
GET /logo.png HTTP/1.1
GET /login?username=ekane11&password=[REDACTED]&session_id=L0b3Ljyced8 HTTP/1.1
GET /login.css HTTP/1.1
GET /logo.png HTTP/1.1
GET /search?query_level=patient&search=today&patient_name=&patient_id=&patient_sex=all&bir
GET /login.css HTTP/1.1
GET /logo.png HTTP/1.1
GET /login?username=ekane11&password=[REDACTED]&session_id=L0b3Ljyced8 HTTP/1.1
GET /search?query_level=patient&search=all&patient_name=&patient_id=&patient_sex=all&birthd
GET /login.css HTTP/1.1

[Close]

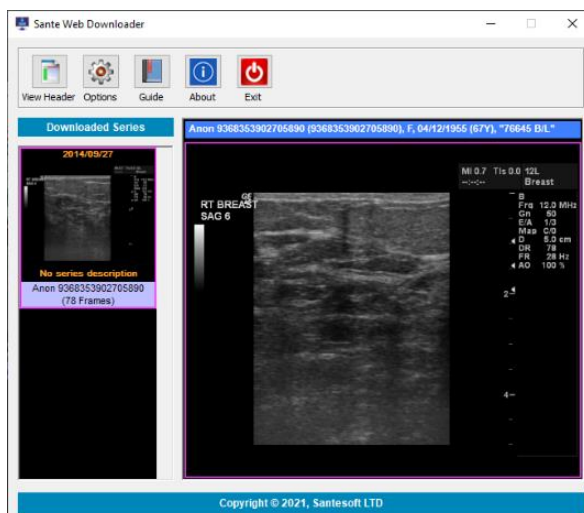
Remote connection with an internet browser

The initial page of the server informs the user that must have an account and must login to connect with server. Also, it provides links for the free application Sante Web Downloader.



Copyright © 2021 Santesoft LTD, all rights reserved

Sante Web Downloader lets the user review the downloading procedure. In the end of receiving Sante Web Downloader saves the received studies in a Zip file. The user can configure Sante Web Downloader to open the saved zip file with a DICOM Viewer of his/her choice like Sante DICOM Viewer Pro or Sante DICOM Editor. The DICOM Viewer must support opening zip files from command line. For more information please read the **User Guide** of Sante Web Downloader.



Sante Web Downloader

The next page of the server asks the remote user for the user name and the password. The administrator of the system must create an account for every user of the web server.

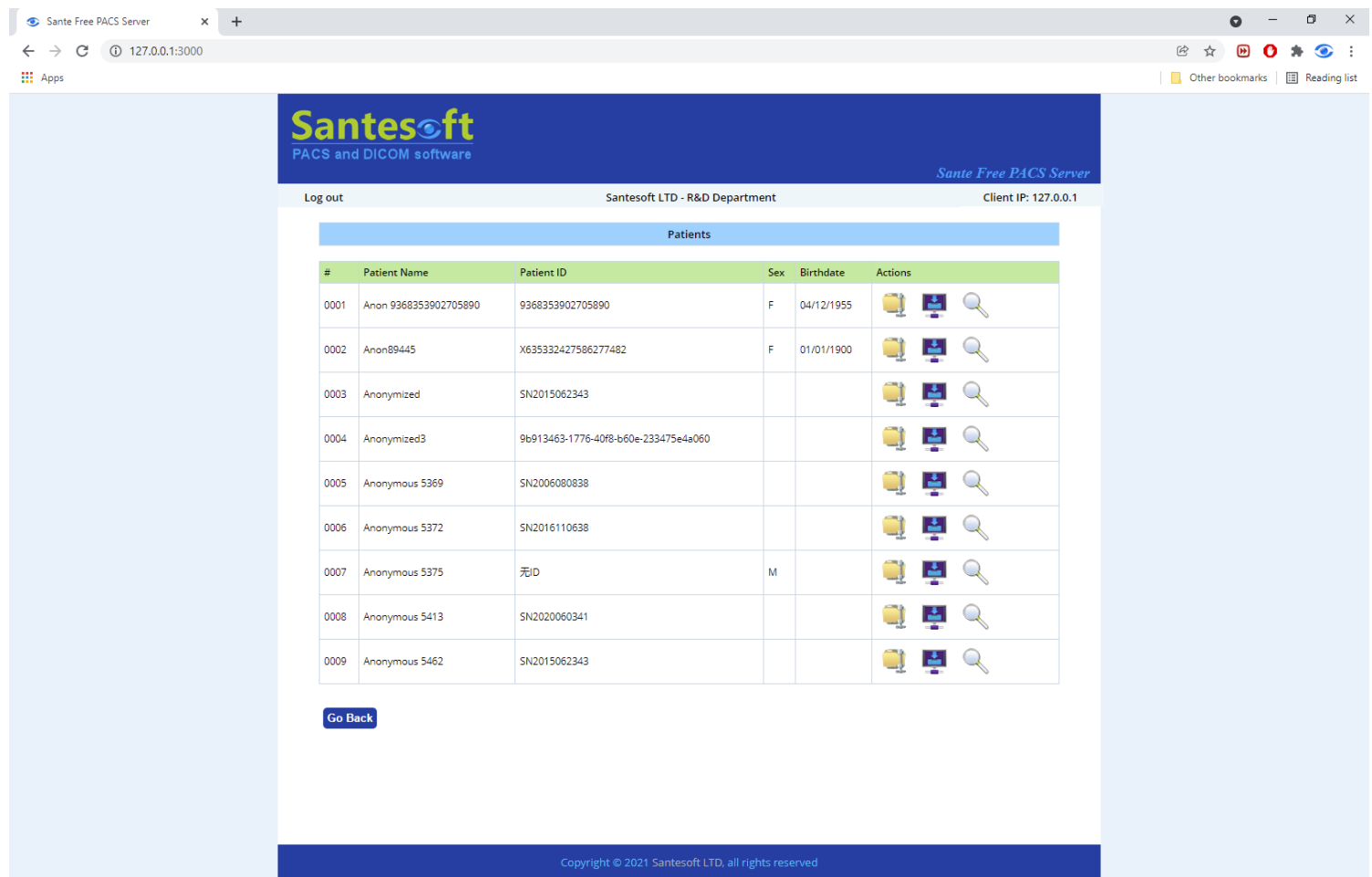
The next page of the server allows the user to query the PACS server remotely and find the studies of the desired patient and/or the studies of the desired date. The search criteria can be the patient name, the patient ID, the patient sex, the patient birthdate, the study date, the accession number, the institution, the referring physician and the modality.

From this page the user can also upload files that can be DICOM files and zip files that contain DICOM files that will be inserted into PACS server, and text files that contain HL7 messages that will be inserted into Worklist server. The user can upload files if the administrator of the system has given this right to the particular remote user. Otherwise the section of the page that allows uploading of files does not appear.




























To search within a range of dates, the user must select the dates in the “**Study date from**” and “**Study date to**” and in the “**Search**” combo box must select the item “**With Study Date**”.

Query		
	<div style="border: 1px solid red; padding: 2px;">Search With Study Date ▼</div>	
Patient Name <input type="text"/>	Patient ID <input type="text"/>	Patient Sex All ▼
Date of birth mm/dd/yyyy <input type="text"/>	<div style="border: 1px solid red; padding: 2px;">Study date from 01/20/2022 <input type="text"/></div>	<div style="border: 1px solid red; padding: 2px;">Study date to 01/31/2022 <input type="text"/></div>
Accession number <input type="text"/>	Institution <input type="text"/>	Referring Physician <input type="text"/>
	Modality ALL ▼	
	<input type="button" value="Submit"/>	

After a query the system displays the patient results if any.



The screenshot shows a web browser window displaying the Santesoft PACS and DICOM software interface. The browser address bar shows the URL 127.0.0.1:3000. The interface features a blue header with the Santesoft logo and the text "PACS and DICOM software". Below the header, there is a navigation bar with "Log out", "Santesoft LTD - R&D Department", and "Client IP: 127.0.0.1". The main content area displays a table titled "Patients" with the following columns: #, Patient Name, Patient ID, Sex, Birthdate, and Actions. The table contains 9 rows of patient data. Below the table is a "Go Back" button. The footer of the interface shows "Copyright © 2021 Santesoft LTD, all rights reserved".

#	Patient Name	Patient ID	Sex	Birthdate	Actions
0001	Anon 9368353902705890	9368353902705890	F	04/12/1955	  
0002	Anon89445	X635332427586277482	F	01/01/1900	  
0003	Anonymized	5N2015062343			  
0004	Anonymized3	9b913463-1776-40f8-b60e-233475e4a060			  
0005	Anonymous 5369	5N2006080838			  
0006	Anonymous 5372	5N2016110638			  
0007	Anonymous 5375	无ID	M		  
0008	Anonymous 5413	5N2020060341			  
0009	Anonymous 5462	5N2015062343			  

There are three buttons for patient result manipulation:




With this button the user can download all the studies of the patient in a zip file.

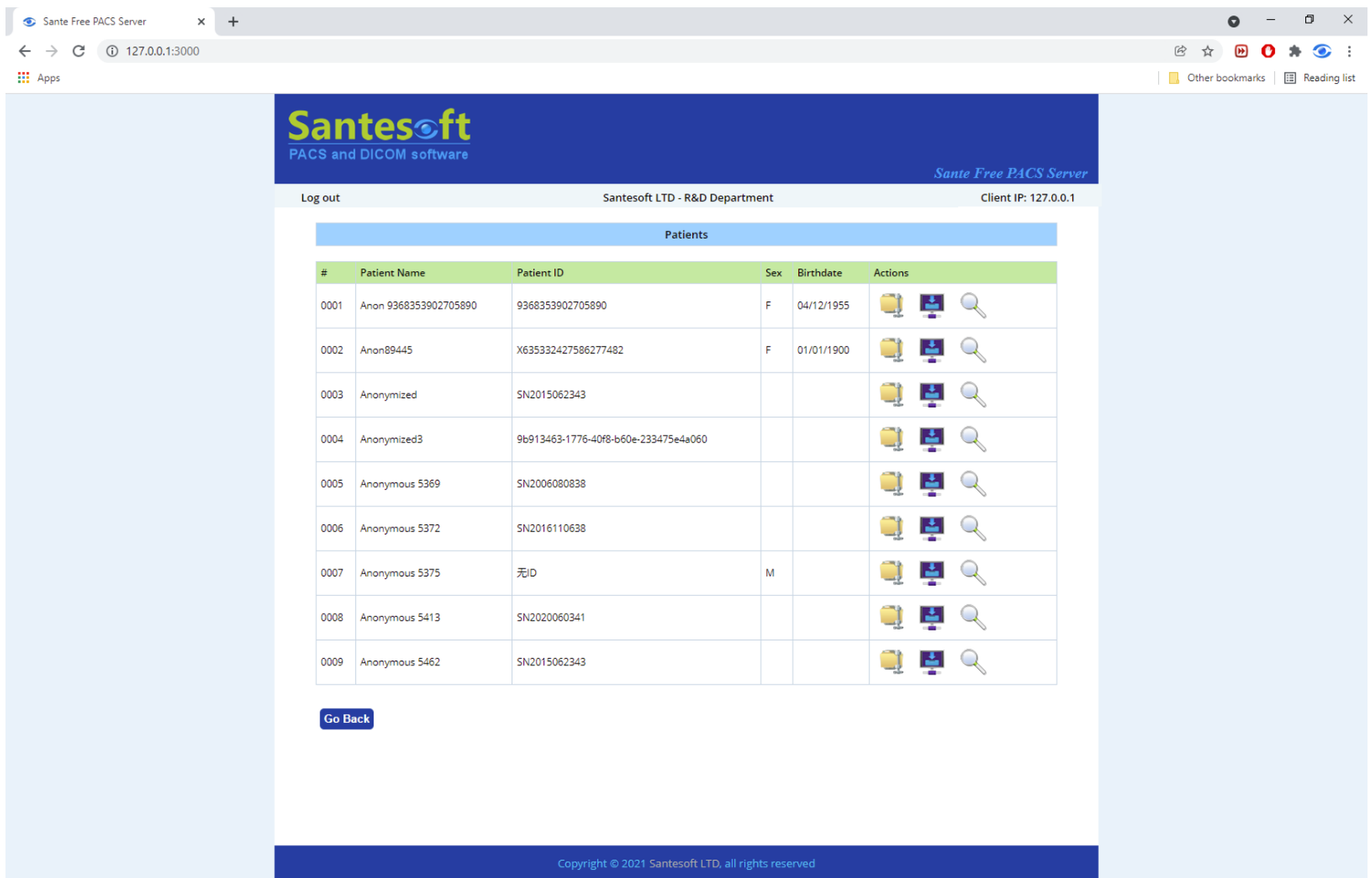


With this button the user can download all the studies of the patient with Sante Web Downloader.






























With this button the user can review all the studies of the patient.

If the user selects to review all the studies of a patient with the button  a new page appears with the study results.



The screenshot shows the Santesoft PACS and DICOM software interface. At the top, there is a navigation bar with the Santesoft logo and the text "PACS and DICOM software". Below this, there is a header area with "Log out", "Santesoft LTD - R&D Department", and "Client IP: 127.0.0.1". The main content area displays a table titled "Patients" with the following columns: "#", "Patient Name", "Patient ID", "Sex", "Birthdate", and "Actions". The table contains 9 rows of patient data. Each row has three icons in the "Actions" column: a folder icon, a computer monitor icon, and a magnifying glass icon. Below the table is a "Go Back" button. At the bottom of the page, there is a copyright notice: "Copyright © 2021 Santesoft LTD, all rights reserved".

#	Patient Name	Patient ID	Sex	Birthdate	Actions
0001	Anon 9368353902705890	9368353902705890	F	04/12/1955	  
0002	Anon89445	X635332427586277482	F	01/01/1900	  
0003	Anonymized	SN2015062343			  
0004	Anonymized3	9b913463-1776-40f8-b60e-233475e4a060			  
0005	Anonymous 5369	SN2006080838			  
0006	Anonymous 5372	SN2016110638			  
0007	Anonymous 5375	无ID	M		  
0008	Anonymous 5413	SN2020060341			  
0009	Anonymous 5462	SN2015062343			  

Again, there are three buttons for study result manipulation:




With this button the user can download all the series of the study in a zip file.

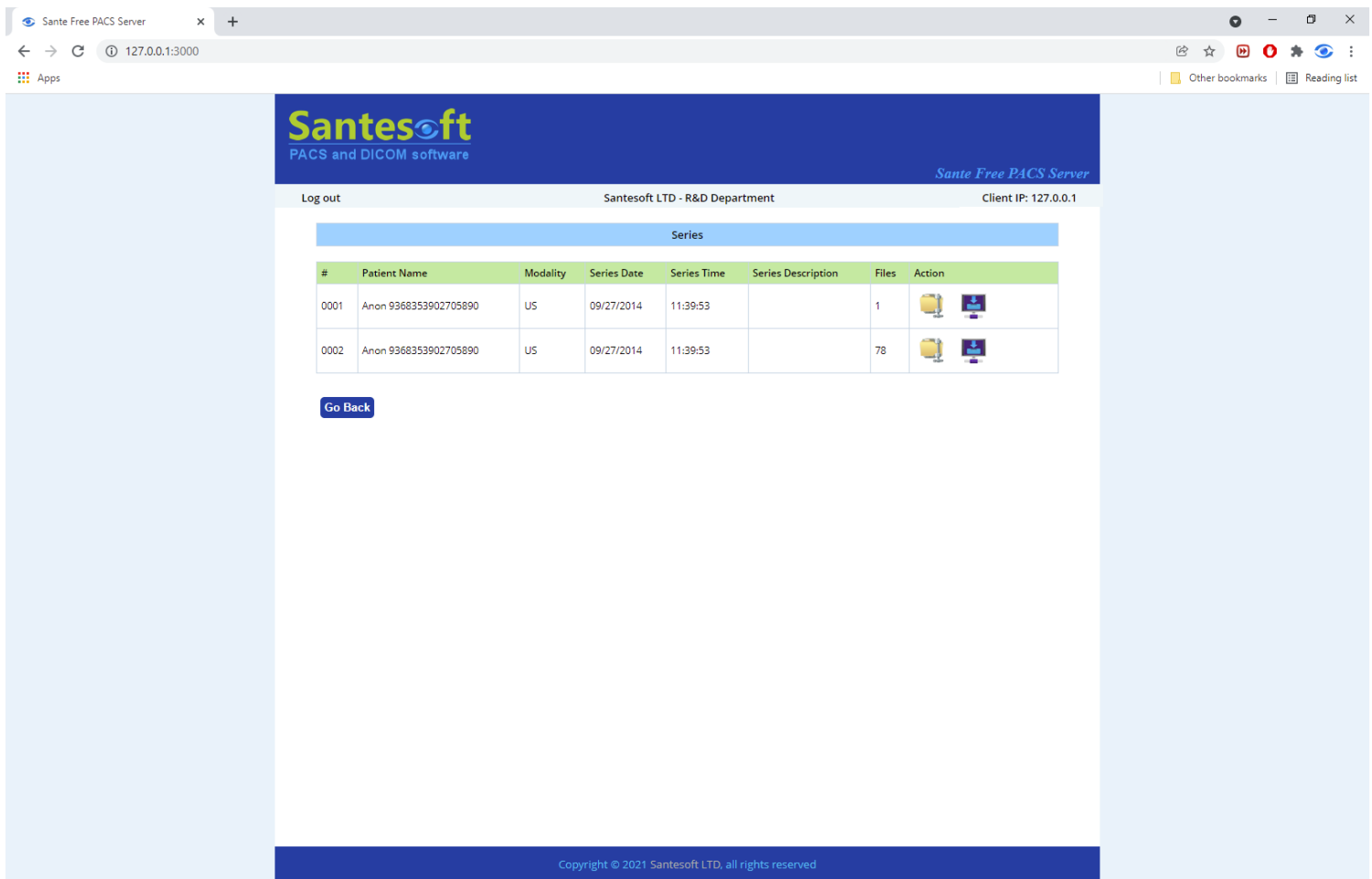


With this button the user can download all the series of the study with Sante Web Downloader.







With this button the user can review all the series of the study.

If the user selects to review all the series of a study with the button  a new page appears with the series results.



Log out Santesoft LTD - R&D Department Client IP: 127.0.0.1

Series							
#	Patient Name	Modality	Series Date	Series Time	Series Description	Files	Action
0001	Anon 9368353902705890	US	09/27/2014	11:39:53		1	 
0002	Anon 9368353902705890	US	09/27/2014	11:39:53		78	 

[Go Back](#)

Copyright © 2021 Santesoft LTD, all rights reserved

Now, there are two buttons for series result manipulation:



With this button the user can download all the files of the series in a zip file.



With this button the user can download all the files of the series with Sante Web Downloader.