**CARESTREAM HEALTH**

Revision History

|  |  |  |
| --- | --- | --- |
| **Revision** | **Description of Change** | **Revision date** |
| 0.1 | Initial version | 2016-05-25 |
|  |  |  |

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# Introduction

These tests focus on the rate of web service response and terminal UI response by monitor the response time. Also there are some stress and stability test scenarios to validate if the server works quickly and stably under extremely heavy load.

In the MongooseInterface, it will provide several key functions:

* *QueryStudyInfo interface*: allow the terminal to retrieve the study list by PatientId;
* *Store2Media interface*: allow the terminal to request the DICOMDIR files from the PS;
* *Store2Print interface*: allow the terminal to request the film output.
* *GetTaskStatus*: allow the terminal to query the Store2Print and Store2Media output status;

In the Terminal UI, there are several main procedures:

* *Swipe card;*
* *Choose DOB;*
* *Confirm exams;*
* *Checkout;*
* *Waiting for print out.*

# Test Environment

The detailed hardware configurations of all servers are described as follow:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Computer name** | **CPU** | **Memory** | **HD** | **OS** | **Comments** |
| PS Server | Intel i7-2600 3.4GHz | 6GB | 1TB | Windows 2012 R2 64bit |  |
| Workstation Server1 | Intel i3-2120 3.3GHz | 8GB | 1TB | Windows 2008 R2 SP1 64bit |  |
| Workstation Server2 | Intel i3-2120 3.3GHz | 8GB | 1TB | Windows 2008 R2 SP1 64bit |  |
| Workstation Server3 | Intel i7-860 2.8GHz | 8GB | 1TB | Windows 2008 R2 SP1 64bit |  |
| Terminal | Intel Atom D525 1.8GHz | 4GB | 450GB | Windows Embedded Standard SP1 64bit |  |
| Test Server | Intel i7-870 2.93GHz | 4GB | 1TB | Windows Embedded Standard SP1 64bit |  |

Table 1 Hardware Configuration

# Test Bed

Prepare 50000 records in the WGGC and RISServer. All the scenarios use the exactly same test bed. The details are as follows:

|  |  |
| --- | --- |
| **Table Name** | **Data Volume (records)** |
| dbo.Patient | 50,000 |
| dbo.AFP\_FilmInfo | 50,000 |
| dbo.AFP\_ReportInfo | 50,000 |
| Study | 50,000 |
| dbo.DeliveryJob | 50,000 |
| dbo.RSPatient | 50,000 |
| dbo.RSOrder | 50,000 |
| dbo.RSReport | 50,000 |

Prepare a certain image size for each modality type, the details are as follows:

|  |  |  |
| --- | --- | --- |
| **Type** | **Numbers of image** | **Size of image** |
| CR | 2 | 8MB |
| CT | 300 | 512KB |
| MR | 100 | 300KB |

# Test Scenarios

## PS: Single User Test

Virtual User: 1 User

Duration: 1 hour

Description:

Only one user runs iteration for each transaction. Print images (CR/CT/MR) from 3 workstations to PS, 3% OCR failed during the test. Simulate user to send web service request. This scenario is designed to be the benchmark of other scenarios, the checkpoints are as follows:

* *Time from QueryStudyInfo*;
* *Time from begin CreatStore2PrintTask to begin print*;
* *Time from begin CreatStore2MediaTask to begin print*;
* *Time from begin CreatReportPrintTask to print complete*;
* *Time of Store2Media;*
* *Time of QueryRetrieve.*

## PS: Multiple users send Web Service Request Test

Virtual User: 10 Users

Duration: 1~2 hour

Description:

10 users run iteration for each transaction. Print images (CR/CT/MR) from 3 workstations to PS, 3% OCR failed during the test. Simulate user to send web service request.

This scenario is designed to validate if the web service functions quickly and stably under an average load, the checkpoints are as follows:

* *Time from QueryStudyInfo*;
* *Time from begin CreatStore2PrintTask to begin print*;
* *Time from begin CreatStore2MediaTask to begin print*;
* *Time from begin CreatReportPrintTask to print complete*;
* *Time of Store2Media;*
* *Time of QueryRetrieve.*

## PS: Multiple users send Web Service Request and Stress Test

Virtual User: 10 Users

Duration: 1~2 hour

Description:

10 users run iteration for each transaction. Print images (CR/CT/MR) from 3 workstations to PS, 30% OCR failed during the test. Simulate user to send web service request.

This scenario is designed to validate if the web service functions quickly and stably under extremely heavy load, the checkpoints are as follows:

* *Time from QueryStudyInfo*;
* *Time from begin CreatStore2PrintTask to begin print*;
* *Time from begin CreatStore2MediaTask to begin print*;
* *Time from begin CreatReportPrintTask to print complete*;
* *Time of Store2Media;*
* *Time of QueryRetrieve.*

## Terminal: UI Response Test

User: 1 User

Duration: 150 iterations

Description:

Print out films and reports, store DCM to USB on terminal.

This scenario is designed to validate if the UI response quickly and stably under an average load, the checkpoints are as follows:

* *Time from swipe card to Terms page*;
* *Time from DOB to exam page*;
* *Time from exam to option page*;
* *Time from option to checkout page*;
* *Time from checkout to TimeRemaining page;*
* *Time of print.*

## Terminal: Stability Test

User: 1 User

Duration: 24 Hours

Description:

Print out films and reports, store DCM to USB on terminal.

This scenario is designed to validate if the UI response quickly and stably during a long duration.

# Schedule

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **Content** | **Begin** | **End** | **Assigner** | **Remark** |
| 1 | Case design &  Script debug | 2016-05-26 | 2016-06-03 | Gavin Chen |  |
| 2 | Set up test environment | 2016-06-06 | 2016-06-10 | Gavin Chen & Guodong Li |  |
| 3 | First round of performance test | 2016-06-13 | 2016-06-17 | Gavin Chen |  |
| 4 | Performance optimization & verification | 2016-06-20 | 2016-06-24 | Gavin Chen |  |
| 5 | Second round of performance test | 2016-06-27 | 2016-07-01 | Gavin Chen |  |
| 6 | Performance optimization & verification | 2016-07-04 | 2016-07-08 | Gavin Chen |  |
| 7 | Third round of performance test | 2016-07-11 | 2016-07-13 | Gavin Chen |  |
| 8 | Performance optimization & verification | 2016-07-14 | 2016-07-15 | Gavin Chen |  |

Describe the overall verification and validation testing objectives.

Please make appropriate modifications to the sample text so it accurately reflects this project.

**<End of Document>**