Administrator Console User's Guide

Accenture StormTest Development Center

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Product Version: 3.3.6

Web: http://www.accenturestormtest.com

Contents

1 Preface

1.1 StormTest

Accenture StormTest Development Center is the leading automated test solution for digital TV services. It is designed to reduce the cost of getting high quality digital TV services to market faster.

StormTest Development Center greatly reduces the need for time-consuming, expensive and error-prone manual testing and replaces it with a more accurate and cost-effective alternative. It scales easily to large numbers and types of devices and integrates with existing infrastructure to give much greater efficiency in testing. It can be used to verify and validate services on a virtually every piece of consumer premises equipment (CPE), from set-top boxes to games consoles and from iPads to Smart TVs. It has been specifically designed to meet the needs of developers and testers of these CPE devices and the applications which run on them.

StormTest Development Center consists of:

- A choice of hardware units that can test 1, 4, or 16 devices. Each device under test can be controlled individually and independently and the audio/video from each device can be captured and analysed to determine the outcome of the test. The StormTest hardware supports capture of audio and video over HDMI interfaces and supports all HD resolutions up to 1080p. In addition there is a hardware upgrade option for the 16 device tester that will allow native capture of UHD content.
- Server software that controls all the hardware and devices in the rack as well as managing a central repository of test scripts and a central database of test results.
- A Client API that allows test scripts to interact with the server software
- A number of graphical tools that allow the user to directly control devices connected to StormTest Development Center, to create and schedule tests to run and to view the results of those test runs.

Test scripts can be run from any location – the tester needs only a network connection to the StormTest server. Video and audio output from the devices under test can be streamed over this network to any location, allowing remote monitoring and control of testing, either within a company LAN or across a WAN. Alternatively, scheduled tests can run directly on the server, negating the need for maintaining a continuous network connection to the StormTest server.

1.2 About This Document

This document describes the Administrator Console.

1.3 Related Documentation

The StormTest user documentation set comprises of the following documents:

1) StormTest Developer Suite User's Manual
2) StormTest Programmer's Guide
3) StormTest Client API
4) StormTest Hardware Installation Guides (HV01, HV04, HV16)
5) StormTest Software Installation Guide
6) StormTest Server Monitor User's Manual
7) StormTest Administration Console User's Guide
8) StormTest Administration Tools User's Guide

The latest version of these documents can always be found on our support website, in the "Docs" section: https://larisa.engage.s3group.com/docman/?group_id=6.

1.4 Revision History

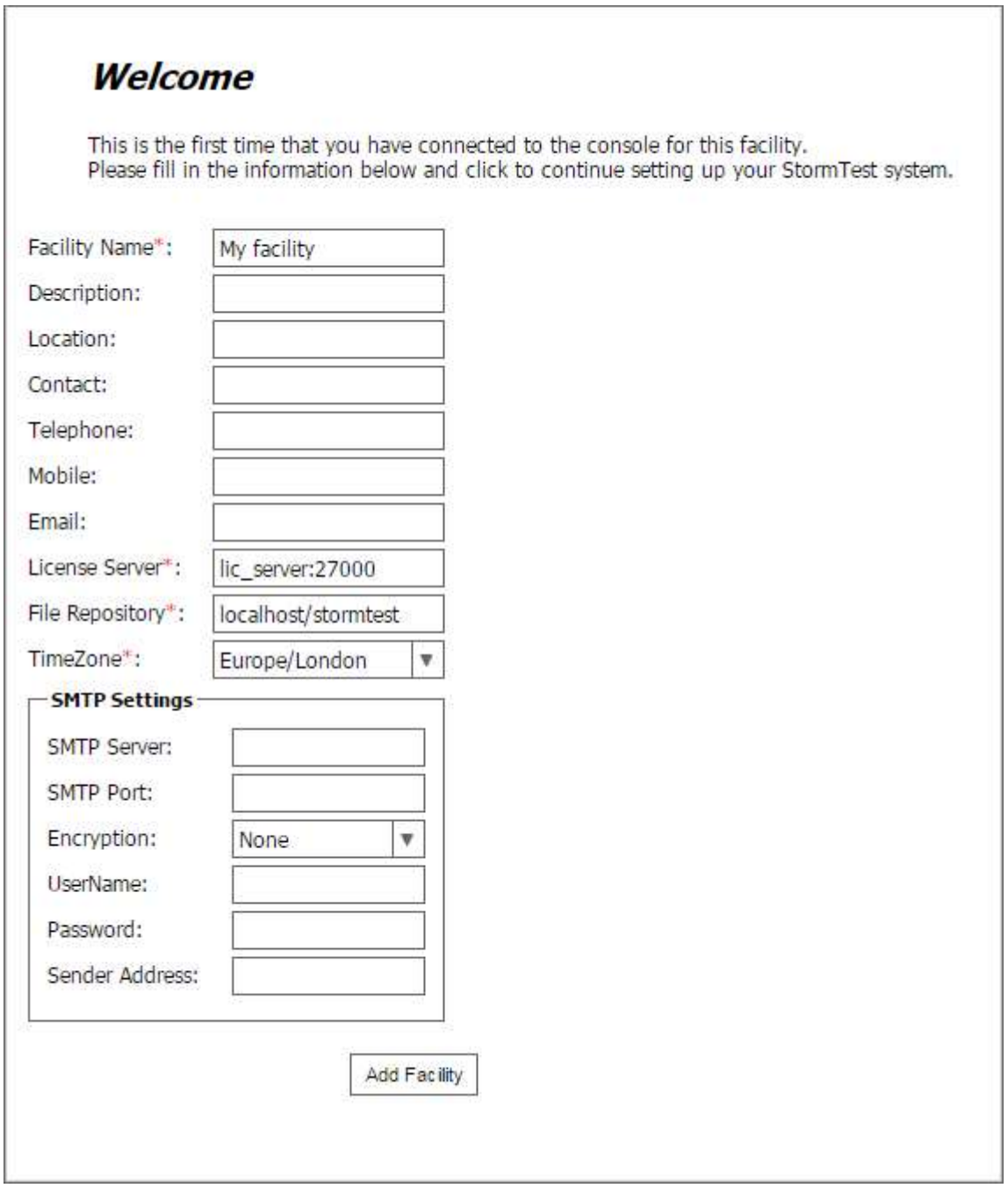
Date	Version	Description
March 2012	2.7	Updated with logo changes for 2.7
July 2012	2.8	Updated with Email Server Configuration addition
January 2013	2.9	Updated for HS64 Server use
April 2013	3.0	Updated for HD, Navigators and change from STB to DUT
September 2013	3.1	Updated for HV16HD and simplified Configuration options
August 2016	3.3.6	Updated for new color scheme

Table 1 - Revision History

2 Creating a Facility

2.1 Creating the Facility

On first use of StormTest Development Center you must create a facility. You will not need to login to do this (as the database is empty, there are no users). You will be presented with the screen:



You must enter valid values for the fields marked with the red asterisk. The other fields are optional and not used in the current version of StormTest. All fields can be changed, however, changing the File Repository location can cause users to lose work and data so should not be done without careful thought.

2.1.1 Facility Name

The name of the facility is displayed by the end user tools as the facility so should be meaningful to them.

2.1.2 File Repository

You should set the File Repository to the correct value, replacing 'localhost' with the machine name where the repository was installed - the system will seem to work using localhost but if you install any Client Daemons on another machine then they will not work.

2.1.3 License Server

You must set the license server to the correct value otherwise your system is not fully licensed and you will not be able to reliably run tests. The system provides a degree of robustness in that if a component cannot contact the license server, it will allow a certain number of tests to run - but after a threshold further tests will not run until contact with the license server is regained - an error in configuration will not be spotted immediately.

2.1.4 TimeZone

The TimeZone is used by the StormTest Developer Suite Web application to ensure that the correct times are displayed for schedules. Select from one of the options that most closely matches your location.

2.1.5 SMTP Settings

This configures the email server to use for sending email notifications on end of schedule. If this is not configured, users will not be able to configure notifications. You should check with your IT department before setting these values. StormTest can send a lot of emails if users configure notifications on all schedules.

SMTP Server and SMTP Port: the name or IP address and the port of the SMTP server you wish to use. The default port is 25.

Encryption: The type of encryption, if any that your SMTP server needs. Only TLS (Transport Layer Security) is currently supported.

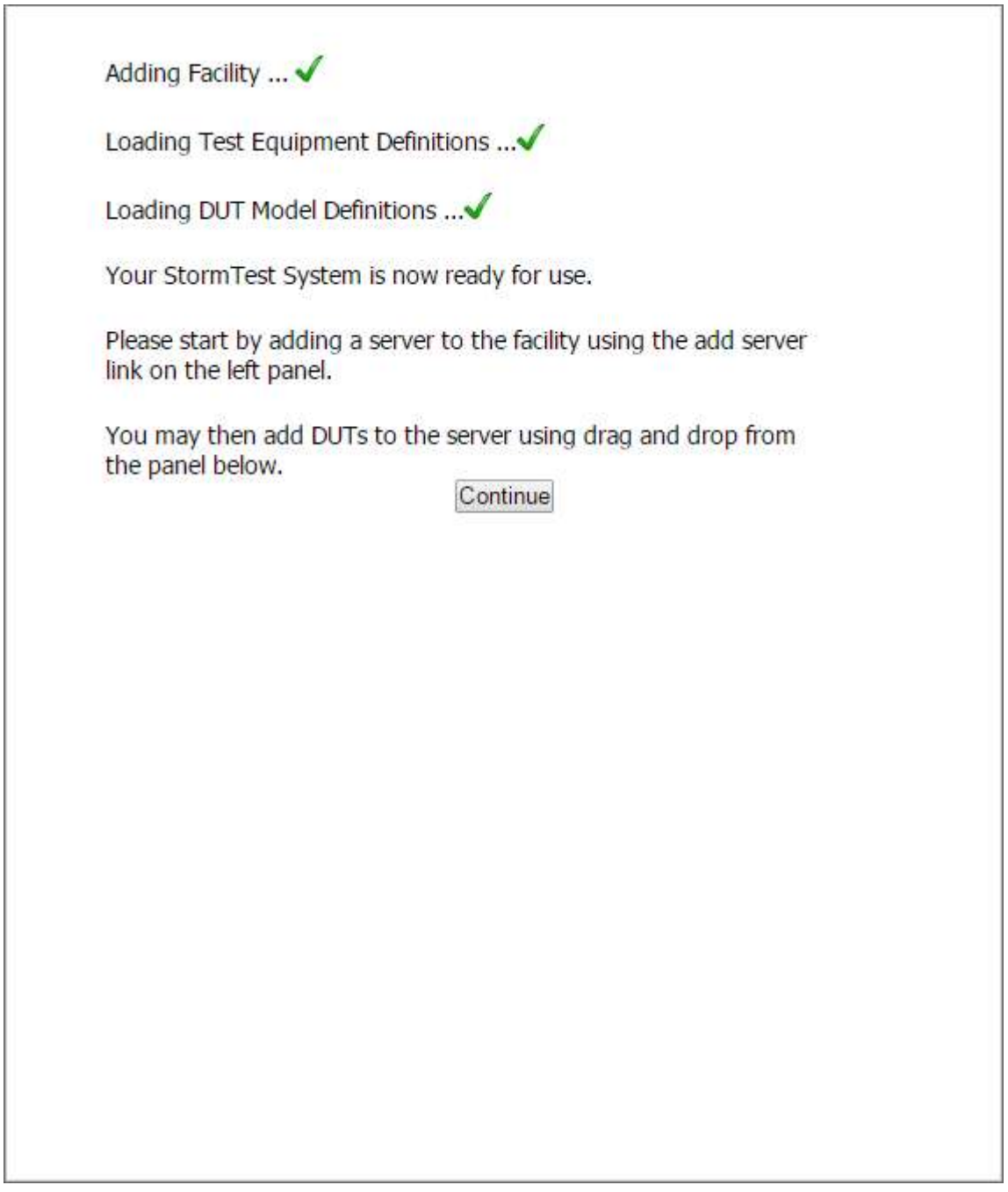
User Name: the name of the user, if any, that is needed. Not all SMTP servers need logon credentials.

Password: the password associated with the user name for log on to the SMTP server. Note that this is stored in plain text in the database. Also, this is rarely the same as the users Windows logon password. Many SMTP systems do not need user name and password. If unsure, consult your IT department or try the system without user name and password.

Sender Address: This is the address that notifications will appear to come from. You may wish to supply an address that is not valid if users try to reply to the notification email. Some SMTP servers may require a valid email address or you may need to tell your IT department what name you are using to prevent spam filters blocking the email. You may use an address such as StormTest Notifier <noreply@somewhere.com> if you wish to provide a human readable sender address.

2.1.6 Completing the configuration

Once you click 'Add Facility', the facility is created and default items are configured. You will see the screen:

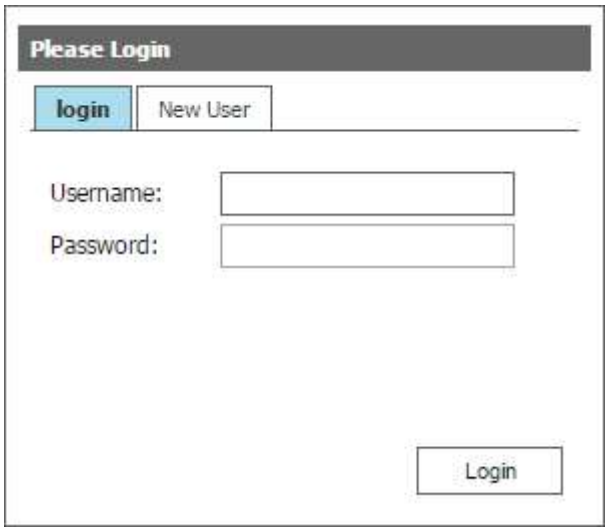


You will need to login to use the StormTest Admin Console from now on.

3 Everyday Usage

3.1 User Login

After creating the facility during system commissioning, you will need to login. You will be presented with a login dialog:



Your user name should be the same as your Windows login.

The current version of StormTest Admin Console does not validate passwords so the field is disabled. Future versions will support this feature.

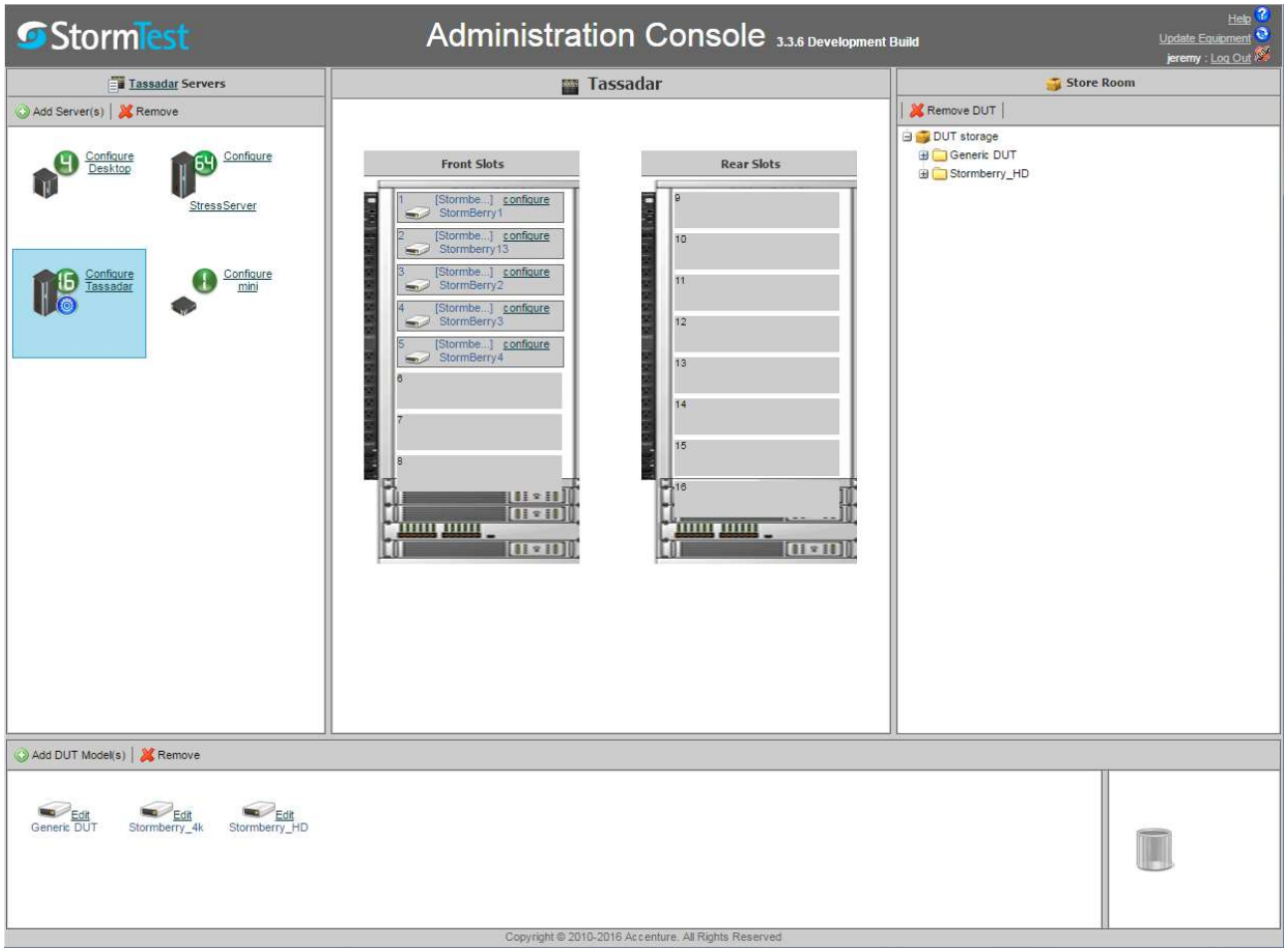
3.1.1 Creating a new user

You can also use StormTest Admin Console to create a new user. Click the 'New User' from the login screen:

The username is mandatory and should be the same as the Windows login id of the user. The Email, First Name and Family Name are optional. The password field is disabled as described above. Click 'Login' to create the user and login.

3.2 The Main Screen

The main screen is divided into 6 main sections:



- At the top right corner are the controls not related directly to the StormTest Development Center facility.
- The large left hand panel shows you the servers in the facility.
- The middle panel shows you the DUTs in a single server.
- The right hand panel shows you the storeroom.
- The lower panel occupying most of the width shows you the DUT models in the facility.
- The lower right panel is the trash can. Dragging DUTs to the trash can removes them from the facility. This is permanent - it is not a recycle bin.

3.3 Help and Logout

At the top right hand corner is a small number of controls not directly related to managing a facility:

The help link brings you to the online help documentation.

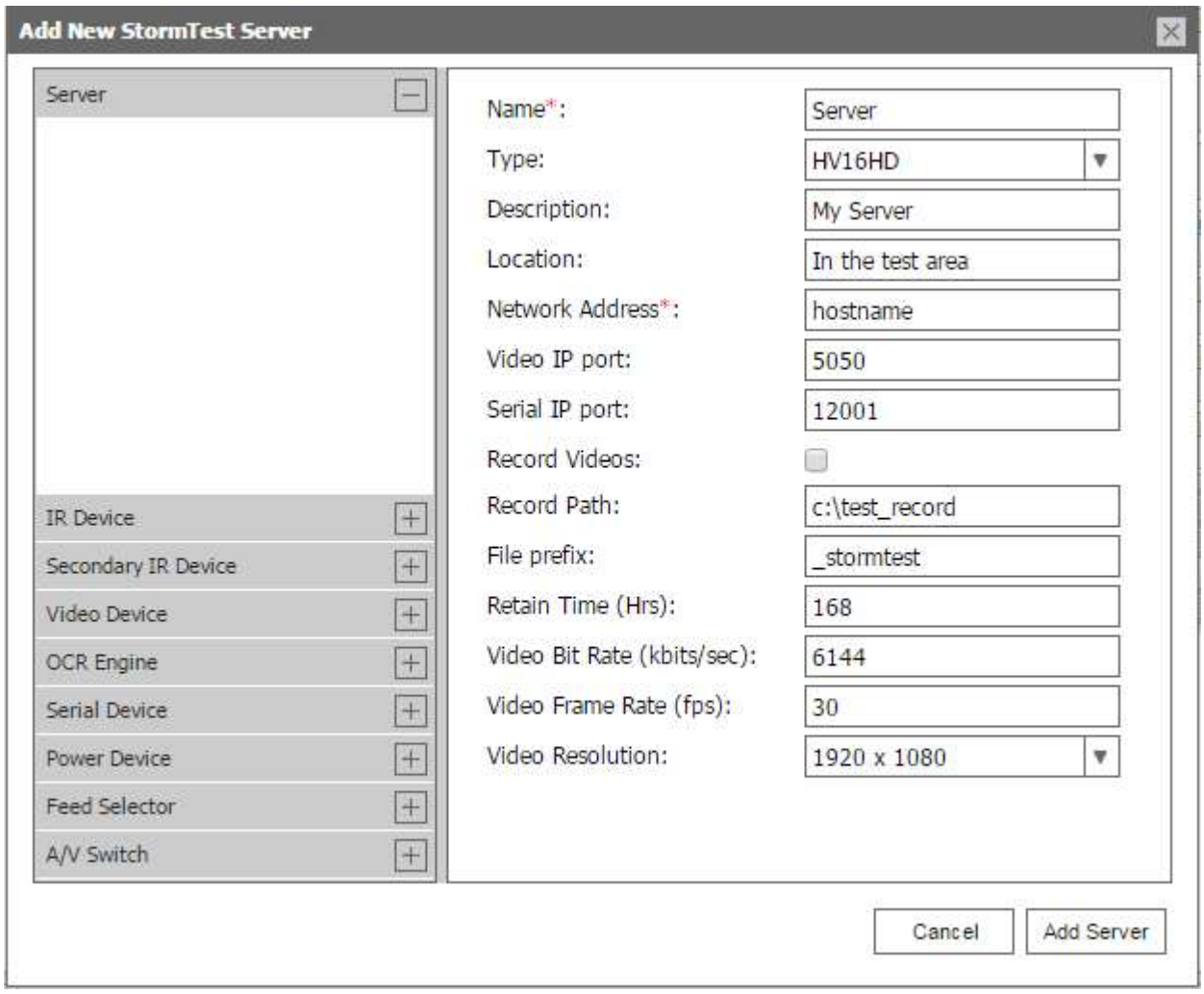
The Log Out link logs you out - you can then log in as a new user

When you first create the facility, StormTest Admin Console loads the database with pre-defined information about the type of equipment loaded into a StormTest Development Center server - this allows you to easily configure a server. If the equipment has been updated then you need to click on the 'Update Equipment' link to load the revised information into StormTest Admin Console. It is physically stored as an XML file on the web server that is running the StormTest Admin Console. An example would be if the remote power supply in the rack is updated to use one from a different supplier.

3.4 Server Configuration

3.4.1 Creating a Server

The large left hand panel shows you the servers in the facility. It will be empty initially but by clicking on 'Add Server(s)', you will be able to add a server:



3.4.1.1 Name

You must enter a server name. It must be unique within the facility.

3.4.1.2 Network Address

You must enter the network address of the server. It may be the hostname or the dotted IP address. It is important to note that either the Name or the Network Address must be the same as the machine name. (The name that has been configured in Windows Control Panel on the server). This is because at startup the server gives its machine name to the Configuration Server and requests its full configuration. The Configuration Server searches for a server both by name and network address so one must match. If your system has a working DNS then you should probably use the host name in both locations. If, however, you don't have a working DNS then you must use the machine name as the server name and the IP address as the network address.

3.4.1.3 Type

Select the type of server. This will set the video device correctly. For the HV04 and HV01 variants, all the internal equipment is set automatically but for the HV16 variants, you need to configure the equipment manually. This is usually done by prior to shipment. The type is the model of the server.

3.4.1.4 Video IP Port

The TCP port used by the video streaming card. This should be 5050 unless directed by support personnel.

3.4.1.5 Serial IP Port

The TCP port used by the server to make available the serial data to/from DUTs. The port listed is the base port of a 16 port range. So, in the example above, DUT in slot 1 of the rack uses TCP port 12001, and DUT in slot 16 uses TCP port 12016 - port 12000 us unused as there is no slot 0. It makes the mental arithmetic easier if DUT n uses base + n port.

3.4.1.6 Record Videos

Check this if you want the video of every test recorded on the server.

3.4.1.7 Record Path

The path where the recorded videos are stored on the server - not used if no videos are being recorded.

3.4.1.8 File Prefix

The prefix of each recorded file, the rest of the name is the date and time of the recording.

3.4.1.9 Retain Time

The number of hours to keep the recordings. Not needed if the server is not recording the files.

3.4.1.10 Video Bit Rate

The default video bit rate for streaming video from the server to clients. A test script can change this if needed. It is entered in kbit/sec so the value of 2048 is 2 Mbits/sec.

3.4.1.11 Video Frame Rate

The default video frame rate for streaming video from the server to clients. A test script can change this if needed. 25 frames per second would be the default in countries using PAL and 30 frames per second for countries using NTSC. The default for HD servers would be 60 - HDMI negotiates the actual setting based on the source devices capability. StormTest HD servers can work up to 60 frames/second.

3.4.1.12 Video Resolution

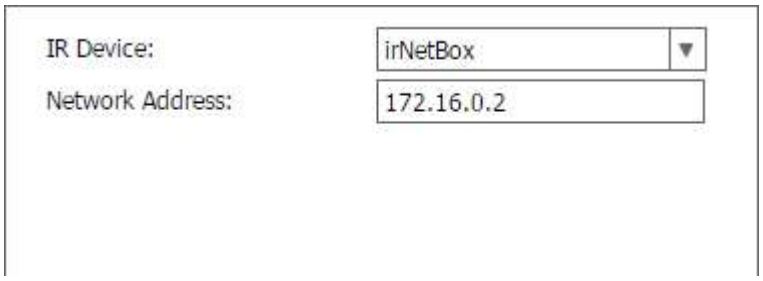
The default size of the picture used for streaming video from the server to clients. A test script can change this if needed. A large picture (704 x 576 is the largest for standard definition servers, 1920 x 1080 for HD servers) gives best results for image comparisons etc but takes most bandwidth. The HD servers capture at the negotiated HD resolution. This setting is ignored. It is recommended to leave this at 1920 x 1080 for HD servers to remind you that it is an HD server.

3.4.1.13 Devices

In the left hand panel is the selection of possible devices that may be installed in your rack. Click on the '+' button to configure them. All of them have a similar set of values to be configured. The exact set depends on the device.

For some models, the device cannot be configured so a simple message stating that the device is built in and cannot be configured will appear.

The IR device is shown below:



3.4.1.13.1 Device type

The title varies (IR Device above) and the combo box allows you to select the correct type. It must match the physical device in your rack. For optional devices, the value of 'None' is allowed.

3.4.1.13.2 Connection Type

For some devices, whether a USB port or COM port is selectable - it is configured using the Connection Type.

3.4.1.13.3 Network Address

The address where the device appears on the network. You can use a host name or dotted IP address. This is not available if the device does not use the network for connection to the server. For serial devices, the option of a COM port exists.

3.4.1.13.4 Port

The network port where the device appears on the network. This is not available if the device does not support port configuration.

3.4.1.14 OCR Engine

This requires a unique configuration. Every server needs to know where the OCR engine is. Thus the 'type' is not a type but the location. You can select 'Local' which means the server itself has an OCR engine or you can select another server in the facility.

3.4.1.15 A/V Switch

This requires a unique configuration. The A/V switch is physically one box per slot in the rack. There does not need to be 16 A/V switches per 16 slot server. The network address of the A/V switch attached to slot 1 is entered in the Network Address field. StormTest assumes that the following slots have successive IP addresses. The port used must be the same for all A/V switches. If some slots do not have an A/V switch, the IP configuration must still match the previous description. So if an A/V switch was in slot 2 and 5 and the Network Address is entered as 172.16.0.6 then the A/V switch in slot 2 must be configured to use 172.16.0.7 and that in slot 5 to use 172.16.0.10.

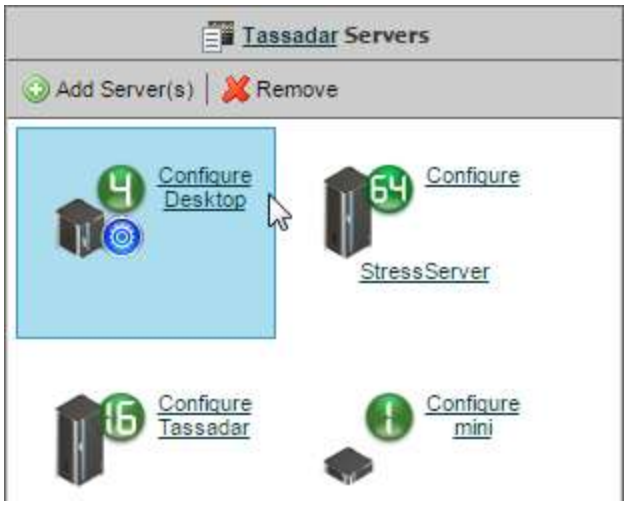
The check boxes need then to be checked to tell StormTest which slots physically have an A/V switch.

3.4.2 Mandatory Devices

You must configure an OCR Engine and a Video device otherwise the server won't start up.

3.4.3 Editing a Server

Once you have configured your servers, they appear in the left hand panel:

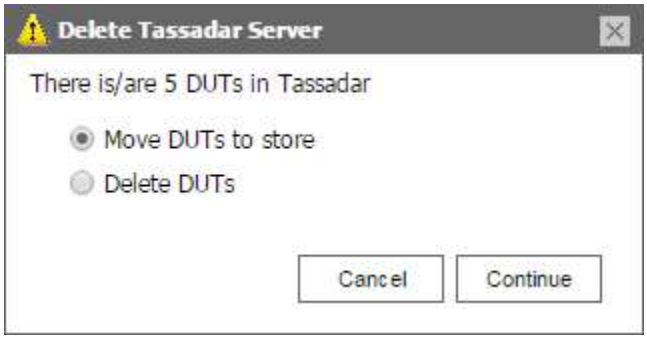


The number of slots is indicated in the green circle. This example shows a 4 slot HV04, a 16 slot HV16, a single slot HV01 and the 64 slot HS64 server.

Clicking a server will show the DUTs in the server in the center panel. You can edit a server by clicking the 'Configure' link next to each server. The same screen as shown in creating a server appears (with a different title). The only difference is that the type is disabled. Changes to the rack equipment have to be made manually.

3.4.4 Deleting a Server

You can remove a server by clicking the Remove button. If there are DUTs in the server, you will be prompted:



You must choose whether to delete the DUTs or move them to the store room (the default option),

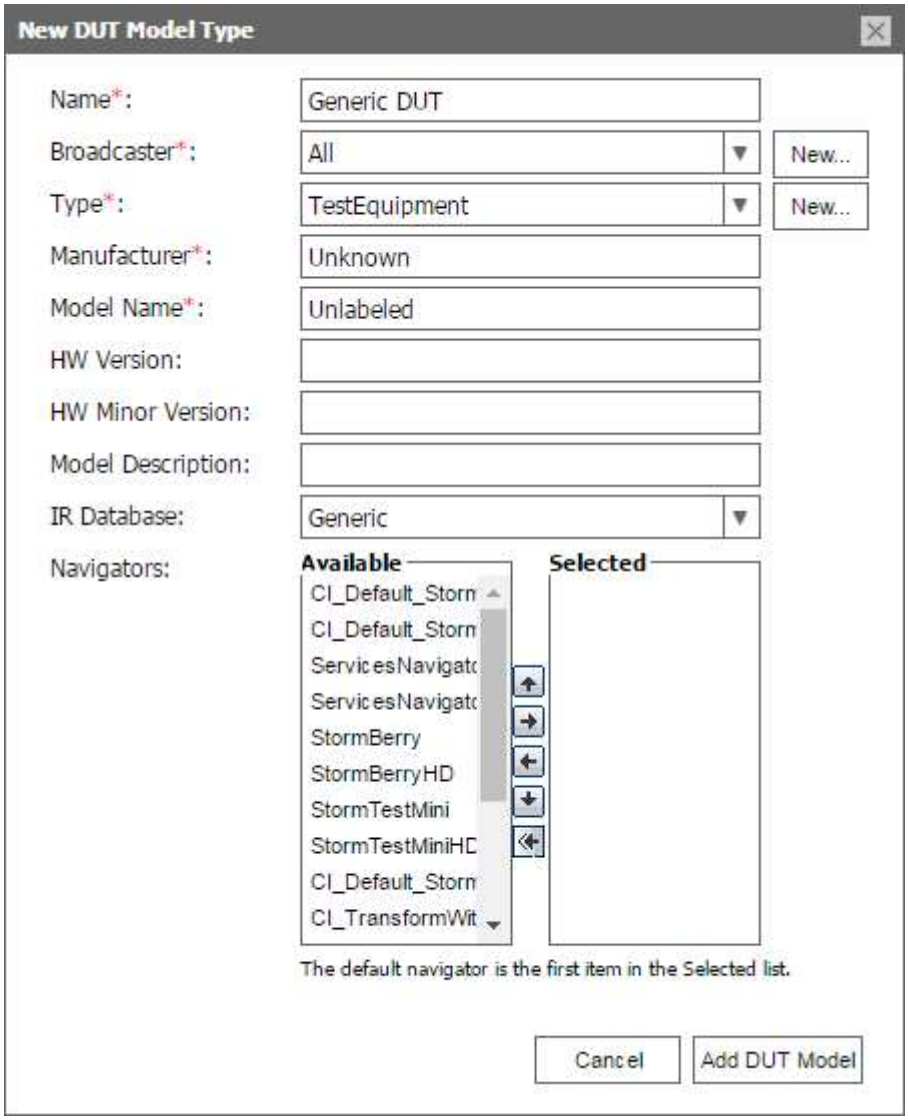
3.5 Adding, Removing and Editing DUT Models

Every physical DUT in the facility is defined to be of a 'DUT Model'. This allows you to define general characteristics for the model and all individual DUTs of that model share those characteristics. Your choice of models (and what constitutes a distinct model) is not fixed by StormTest Development Center. Since you can schedule tests by DUT Model, anything which might affect a test execution should probably persuade you to create a distinct model.

3.5.1 Creating a DUT Model

The lower panel of the StormTest Admin Console shows you the DUT models in the facility (listed alphabetically) and the option to create new models:

Click the 'Add DUT Model(s)' to create a new DUT model:



All fields with a red asterisk are mandatory.

3.5.1.1 Name

The name of the DUT Model - this is shown in the lower panel of StormTest Admin Console and also in the StormTest Developer Suite software to end users. It need not be unique but should be unique to avoid confusion.

3.5.1.2 Broadcaster

An optional field to indicate if the DUT is tied to a broadcaster. The Configuration Server supplies an option, not yet used, to search for an DUT based on this field so it should be filled in correctly. You can create a new broadcaster by clicking the 'new' button:

3.5.1.3 Type

StormTest Development Center implements a two level hierarchy for the DUT models: each DUT model has a DUT type. As with the broadcaster, the Configuration Server supplies an option to search for a DUT based on type. It is also shown to the user in StormTest Developer Suite. You can create a new type by clicking the 'new' button:

3.5.1.4 Manufacturer

Enter the manufacturer of the DUT model. This is shown to the user in StormTest Developer Suite.

3.5.1.5 Model Name

Enter the manufacturer's model name of the DUT model. This is shown to the user in StormTest Developer Suite.

3.5.1.6 HW Version

The version of hardware of the DUT model. The Configuration Server supplies an option, not yet used, to search for a DUT based on this field so it should be filled in correctly.

3.5.1.7 HW Minor Version

A sub division of the hardware version of the DUT model. The Configuration Server supplies an option, not yet used, to search for a DUT based on this field so it should be filled in correctly.

3.5.1.8 Model Description

A description of the model - free format to help you know what the model is.

3.5.1.9 IR Database

The coding of the IR keys that this model uses. These are stored in the StormTest Development Center database and each server downloads the values. You cannot create new ones from StormTest Admin Console but must use the IR Trainer application which is part of the Admin Tools. That application allows you to read the IR signals from the real IR Remote control and store all the required data in the database.

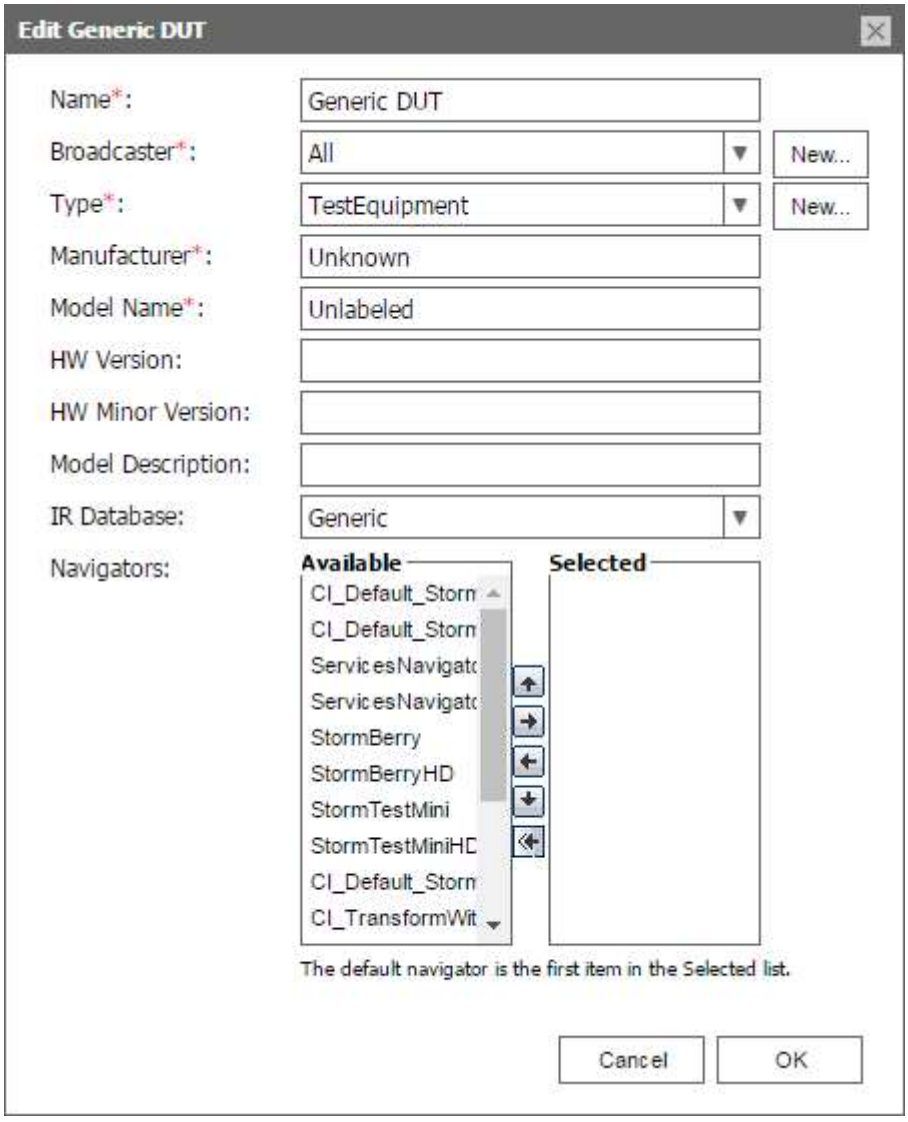
This means that after installing your system, you must train at least one remote control before you can fully create DUT models. To make the process slightly easier, you can create a DUT Model without an IR Database. You can then train the IR codes in one process and update the DUT Models.

3.5.1.10 Navigators

The list of navigators supported by the DUT model. This is a new optional feature of Release 3.0. Each DUT model may have one or more navigators associated with it. These have to be created in StormTest Developer suite and uploaded to the navigators area in the repository. Once this is done, StormTest scripts can use the navigator to help screen navigation logic. Use the buttons between the 'Available' and 'Selected' boxes to move navigators to and from the DUT model. The uppermost navigator of the 'Selected' box is the default for the DUT model. The order of the other navigators has no significance and may not be preserved when using the Admin Console later.

3.5.2 Editing a DUT Model

Once the DUT Model has been created, you can change it by clicking the 'Edit' link that appears next to each model. You will see the same dialog as above but with a different title:



3.5.3 Removing a DUT Model

Click on the 'Remove' button. If there are any DUTs of that model in the facility, then you will see a prompt:

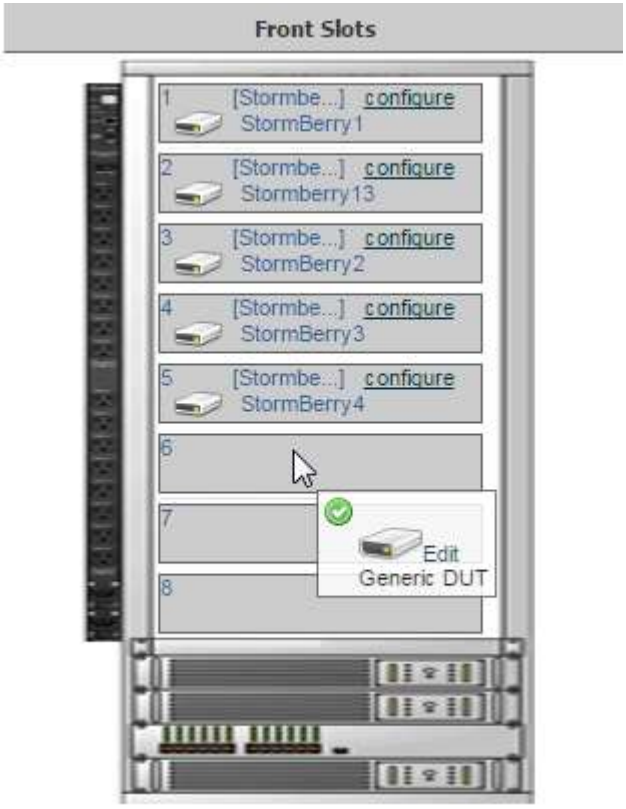
If the DUT model or DUTs using the model are being used in a schedule, then those schedules will no longer be able to run. You should use care when deleting DUT Models.

3.6 Adding, Editing and Removing DUTs

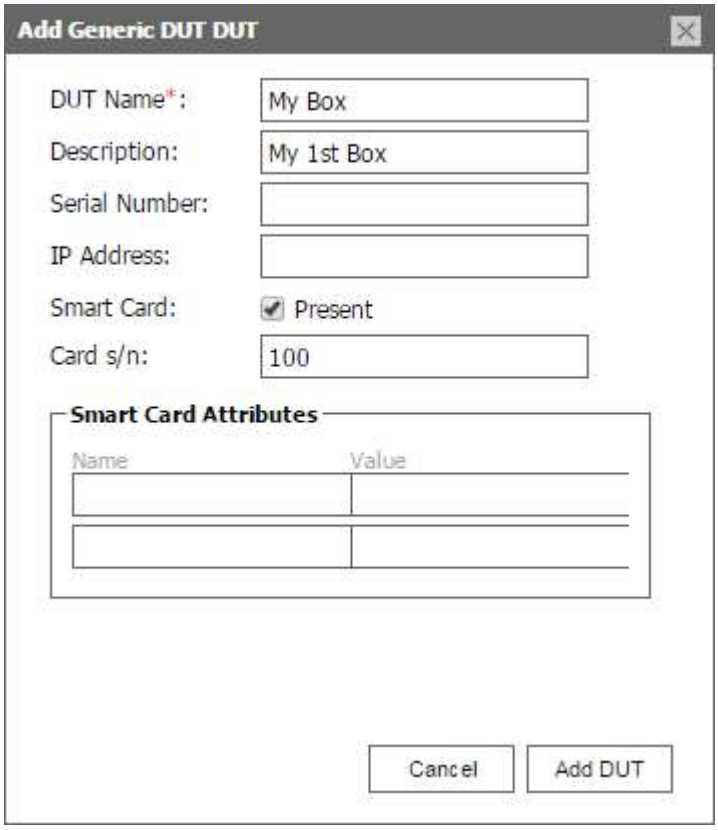
Once you have created a server and a DUT Model, you can create a DUT instance. Each DUT instance represents a single physical DUT within the facility. A DUT can be in a server or in the store room.

3.6.1 Creating a DUT

To create a DUT, click the DUT model which will be the 'type' of DUT and drag it to the server slot where the DUT exists:



You can also drag the DUT Model to the Store Room - this way you can create a lot of DUTs without needing to know their final destination in the servers. When you drop the DUT Model, you will see a dialog to create the DUT instance:



All fields marked with a red asterisk are mandatory.

3.6.1.1 DUT Name

The name of the DUT. This will be shown to the StormTest Developer Suite user so that he/she can identify individual DUTs. It should be unique but that is not enforced by StormTest Admin Console.

3.6.1.2 Description

A description of the DUT.

3.6.1.3 Serial Number

The serial number of the DUT. The Python API provides a function to search for DUTs by serial number so it should be set correctly.

3.6.1.4 IP Address

The IP address of the DUT for those that support IP connectivity. Currently not used by StormTest Development Center.

3.6.1.5 Smart Card

Check this if a smart card is present.

3.6.1.6 Card s/n

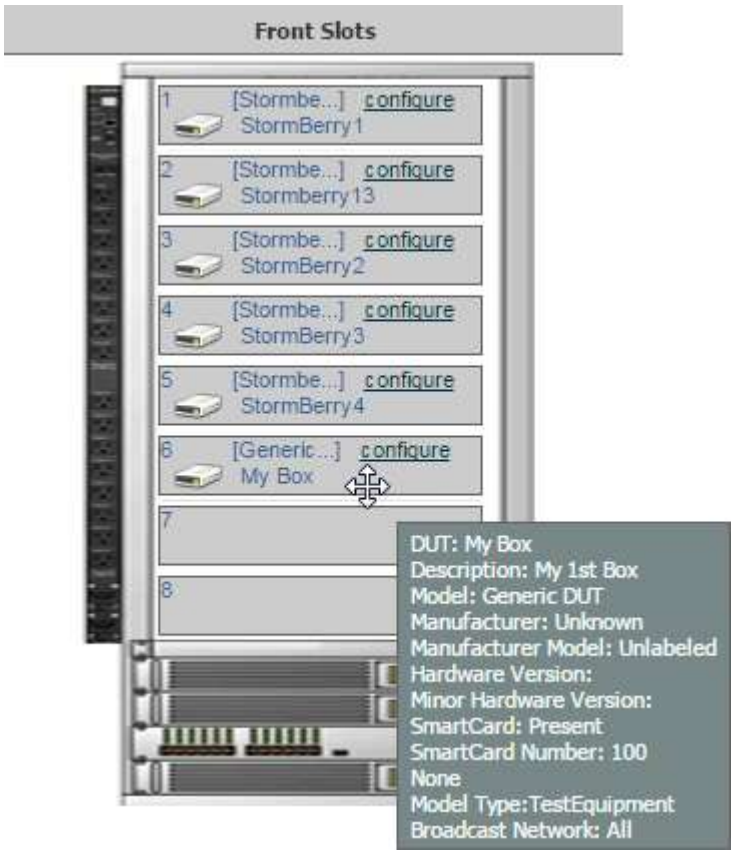
The number of the smart card. Will be enabled only if the above check box is checked.

3.6.1.7 Smart Card Attributes

Not supported in this version of StormTest Development Center.

3.6.2 Editing a DUT

Once a DUT is in a rack, you can edit its configuration:



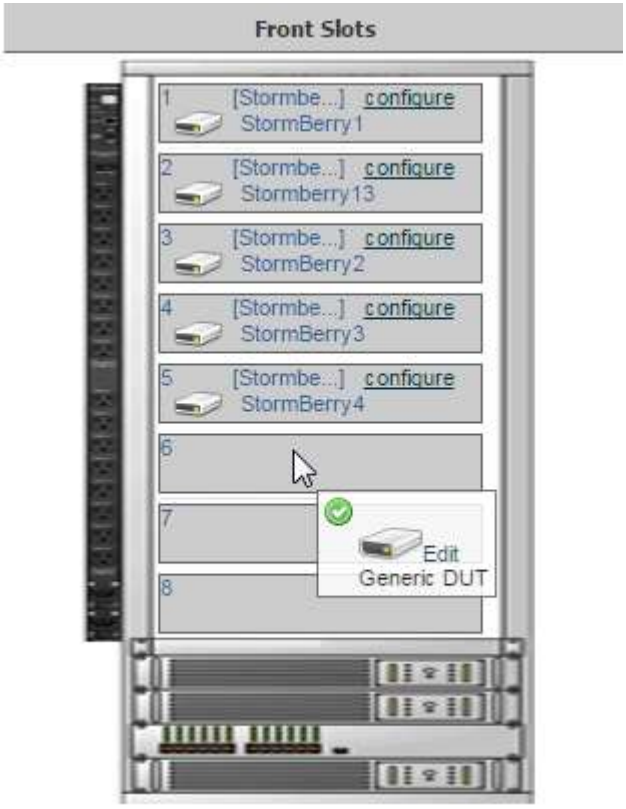
Click the 'Configure' link. A dialog appears which is the same as the box above. You cannot change the DUT Model of a DUT once it is created.

3.6.3 Removing a DUT instance

To remove the DUT instance from the facility, drag it to the trash can in the lower right corner of the screen. See also the Store Room.

3.7 Moving an DUT within a Server

From time to time, you will physically move DUTs. It is important that you keep the facility up to date so that scheduled tests run correctly and on the expected DUT. If you move a DUT from one slot to another within a server, select the server and just drag the DUT to the new slot:



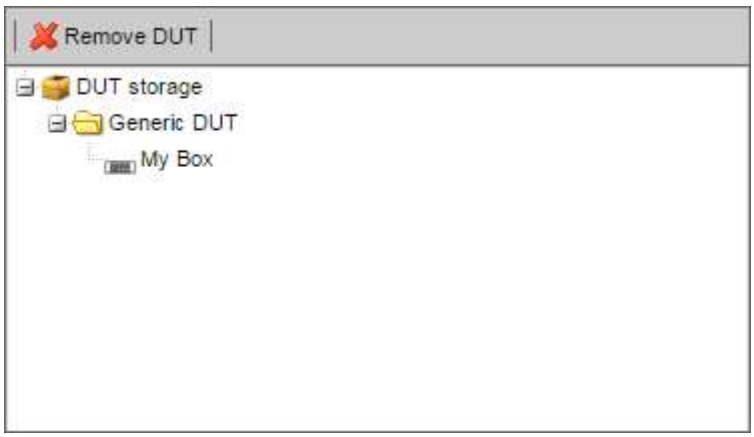
If the new slot was occupied then the DUT that was in that slot is automatically moved to the Store Room.

3.8 Moving a DUT between Servers

From time to time, you will physically move DUTs. It is important that you keep the facility up to date so that scheduled tests run correctly and on the expected DUT. If you move a DUT from one server to another, select the server where the DUT was and move the DUT to the Store Room. Then select the DUT where it now is and move the DUT from the Store Room to the server.

3.9 Using the Store Room

The right hand panel of the main screen is the store room. This is a logical concept and holds all the DUTs in the facility that are not in a server. These are organized into folders based on DUT Model Name.



If a DUT is used by a schedule but is temporarily removed from a server then it should be moved to the store room and not deleted. The reason is that the schedules identify a DUT by an internal numeric Identifier. Deleting a DUT and then creating a new DUT with the exact same values does not reuse the identifier so although to a human being the deleted and new DUT are the same, to the scheduler they are different.

The store room is needed when transferring DUTs between servers - you first move it to store and then out of the store room.

3.9.1 Moving DUT to the Store Room

Just click on the DUT in the server and drag to the store room area - there is no need to drop exactly in the right folder, StormTest Admin Console will put it in the correct folder.

3.9.2 Moving DUT from the Store Room

Just click on the DUT in the store room and drag to the desired slot in the server.

3.9.3 Deleting DUT from the Store Room

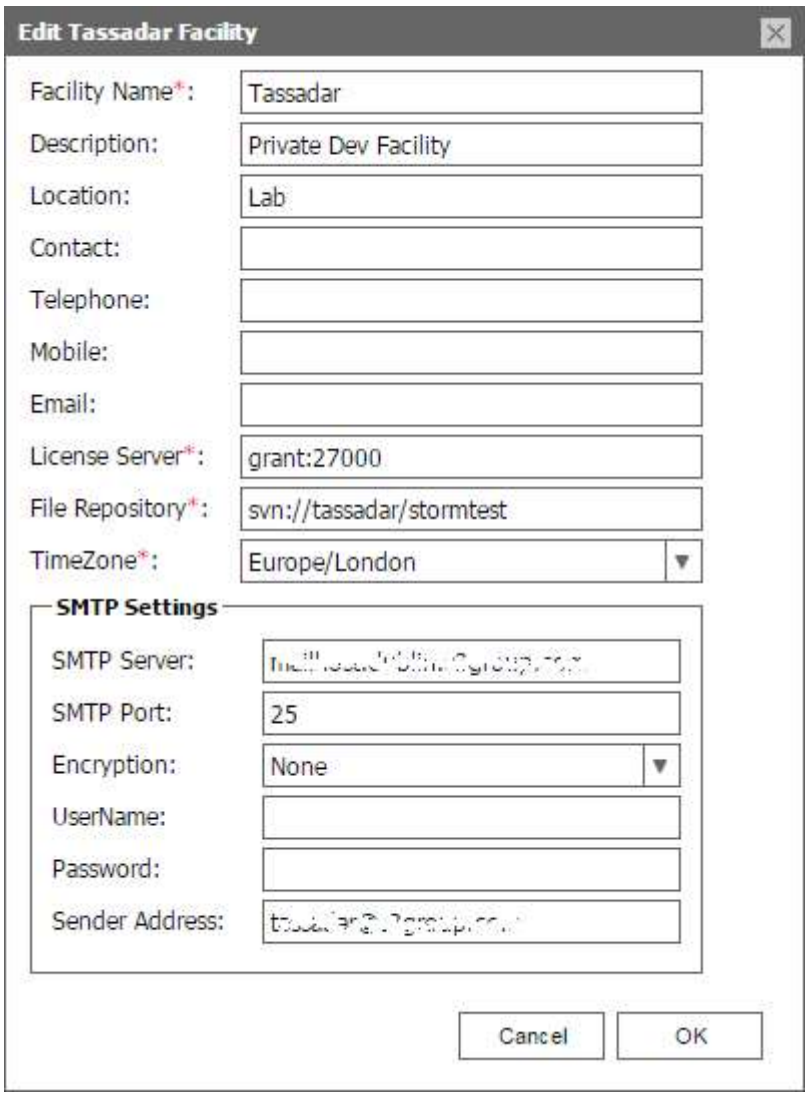
Just click on the DUT in the store room and drag it to the trash can in the lower right corner of the screen.

3.9.4 Creating DUT in the Store Room

You can create any number of DUTs directly in the store room. When dragging to create the DUT, instead of dropping it on a slot in a server, drop it into the store room, then complete the process as if it were in a slot.

3.10 Changing the Facility

Above the server list on the main screen is the title of the facility with a link to change the facility configuration. This does not connect you to a different facility - that requires navigation to a different URL, it instead allows you to modify the configuration of the exiting connected facility:



You can change all the fields. However those marked with a red asterisk cannot be left empty.

3.10.1 Facility Name

The name of the facility is displayed by the end user tools as the facility so should be meaningful to them.

3.10.2 File Repository

You should set the File Repository to the correct value, replacing 'localhost' with the machine name where the repository was installed - the system will seem to work using localhost but if you install any Client Daemons on another machine then they will not work.

You should not change the File Repository unless the initial configuration was incorrect. If you do change it, you should restart all servers in the facility (including the Configuration Server, scheduler and all Client Daemons).

Note that on the initial screen, you must specify hostname/path but when re-configuring you must supply the full url including svn://

3.10.3 License Server

You must set the license server to the correct value otherwise your system is not fully licensed and you will not be able to reliably run tests. The system provides a degree of robustness in that if a component cannot contact the license server, it will allow a certain number of tests to run - but after a threshold further tests will not run until contact with the license server is regained - an error in configuration will not be spotted immediately.

3.10.4 TimeZone

The TimeZone is used by the StormTest Developer Suite Web application to ensure that the correct times are displayed for schedules. Select from one of the options that most closely matches your location.

3.10.5 SMTP Settings

This configures the email server to use for sending email notifications on end of schedule. If this is not configured, users will not be able to configure notifications. You should check with your IT department before setting these values. StormTest can send a lot of emails if users configure notifications on all schedules.

SMTP Server and SMTP Port: the name or IP address and the port of the SMTP server you wish to use. The default port is 25.

Encryption: The type of encryption, if any that your SMTP server needs. Only TLS (Transport Layer Security) is currently supported.

User Name: the name of the user, if any, that is needed. Not all SMTP servers need logon credentials.

Password: the password associated with the user name for log on to the SMTP server. Note that this is stored in plain text in the database. Also, this is rarely the same as the users Windows logon password. Many SMTP systems do not need user name and password. If unsure, consult your IT department or try the system without user name and password.

Sender Address: This is the address that notifications will appear to come from. You may wish to supply an address that is not valid if users try to reply to the notification email. Some SMTP servers may require a valid email address or you may need to tell your IT department what name you are using to prevent spam filters blocking the email. You may use an address such as StormTest Notifier <noreply@somewhere.com> if you wish to provide a human readable sender address.

3.11 Core Concepts

The key concepts to understand in order to effectively use the StormTest Admin Console are:

1. StormTest Development Center Facility
2. File Repository
3. User Identification

3.11.1 StormTest Development Center Facility

A facility is a logical concept intended to represent a single location with one or more StormTest Development Center servers. Each server has up to 16 DUTs. The HS64 has 64 physical DUTs but the control logic combines 4 DUTs into a bank so there are 16 banks, each of which can be controlled independently. The facility exists as a data definition in a PostgreSQL database with each server and every DUT defined in the database. If the definitions are not correct, then the Test Manager and scheduler will not produce the expected results. You do not communicate directly with the database, instead you use a component called the Configuration Server (often shortened to Config Server). All the configuration details of the servers and DUTs are in this database. Actual configuration is done using a web based tool - the StormTest Admin Console.

3.11.2 File Repository

Users' test files (Python scripts, Test Creator tests and any associated image files) must be stored in the StormTest Development Center file repository in order for them to be executed by the StormTest Development Center scheduler. The physical location of the repository is part of the StormTest Development Center Facility definition and is set using the StormTest Admin Console. This repository is a 3rd party tool (Subversion) but the full features are not exposed to the end user. You should not try to manage the repository outside of the features supplied by the Configuration Server - to do so may cause significant problems because the Configuration Server is not written to allow such changes.

3.11.3 User Identification

The StormTest Development Center client has always used your Windows logon name to identify itself to the server. The StormTest Admin Console is a web based tool and thus has no access to your Windows account details - you need to supply them manually.