X-tracer

User Guide

v1.0.3

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Contents

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Introduction

X-tracer is a perfect complement to EAM. As the trace information that is created by XEServer is physically disconnected from UI, the user needs to traverse volumes of trace files and manually relate their information back to the route components in EAM.

X-tracer combines trace data with the graphical view of the routes. A familiar view of the routes is seamlessly connected with the tracer information to create the user experience that the XEServer developers have been missing.

Our goal is to create the best debugging utility for them.

Here are the main features of X-tracer:

- Seamless navigation through tracer data within the context of the graphical route view
- Search of properties, macros and variables that are used in profiles
- Feeding data files into profiles – a perfect QA assistant
- Versioning of routes
- Multiple views of the various versions of routes

Background

Below is an overview of the current development cycle.

Once a product's architectural design passes the analysis and scrutiny of peers and prospective customers and gets the buy-in from management, the physical development begins to take shape. Edifecs engineers are presented with a feature rich development environment of EAM and SpecBuilder. These facilities are used to build the product – profiles and the supporting artifacts. Adhering to the principles of spiral development model here is what typically occurs:

1. a very limited scope of functions is implemented, routes and services are built and the profile is saved
2. routes are tested against some test data and the logic is validated
3. more sophisticated functions are added on and new versions of the logic are built
4. routes are tested again using previously saved and newly compiled data sets
5. steps 3 and 4 are repeated over and over until a state of some sort of completion is achieved
6. deployment steps are followed and product is delivered to the systems that are outside of the development area

At that point the profile is executable and ready to be started from the Admin Console. Steps 1 through 5 constitute typical development cycle. EAM and SpecBuilder modules are used for steps 1 and 3.

Steps 2 and 4, however is where the gaps exist in the current system.

When so configured, XEServer could, in the course of execution of routes, produce what is called trace files. Trace files are created in such a way that a single pair of files, a payload file and a properties file, is generated up on completion of every route component's work. Basically, if a component took part in the route's execution then there is some kind of trace of its actions. In essence, a single pair of these trace files constitutes a snapshot of the route's state just after the component in question finished working on its message. And a collection of these trace file pairs, or steps, represents the most detailed step-by-step trace of the entire run.

After these files are assembled, one would need to examine every set of these tracer steps in order to follow the details of all the steps that were taken. Of course in order to understand and be able to make sense of this trace data one would need to correlate these trace files to the route components and all of their internal settings. These are the tedious activities in which XEServer developers are engaged when debugging their routes.

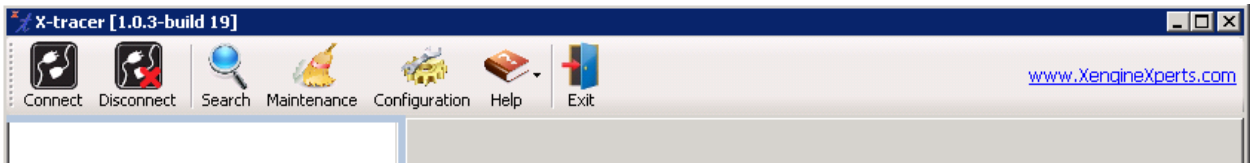
Welcome to X-tracer.

Its purpose is to organize trace files and routes into a consolidated debugging facility.

We hope you will enjoy using this product.

Navigation

Below is a snapshot of the main control panel.



General navigation notes

X-tracer implements auto-saving of the UI elements while you navigate throughout the product's screens. This means that by resizing or moving the main X-tracer window or by resizing the panes you implicitly cause the dimensions and positioning of the windows saved thus making them persist between sessions. When you exit and re-enter the program the state of your session would be saved and restored automatically.

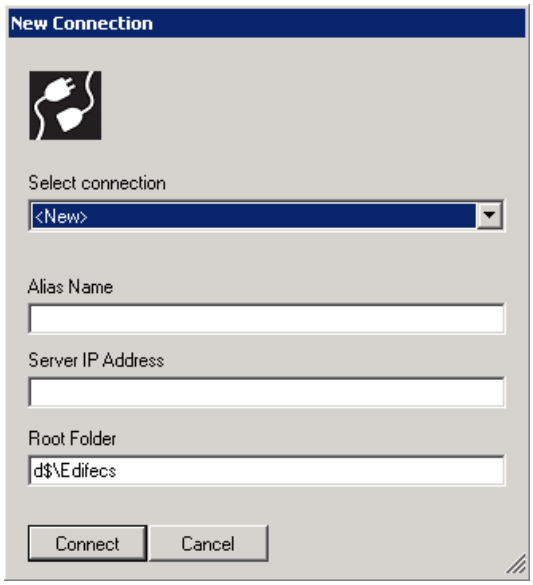
Synchronizing views

As you navigate through X-tracer you will discover that all pieces of information are interconnected and logically related. You can find tracer steps by setting focus on route components and you can find route components by setting focus on tracer steps.

Connecting to server

By pressing 

button you are taken to the “New Connection” dialog where you could either select from the list of server to which you previously connected or specify parameters to the new server. Picture below shows how the user would connect to a designated server.

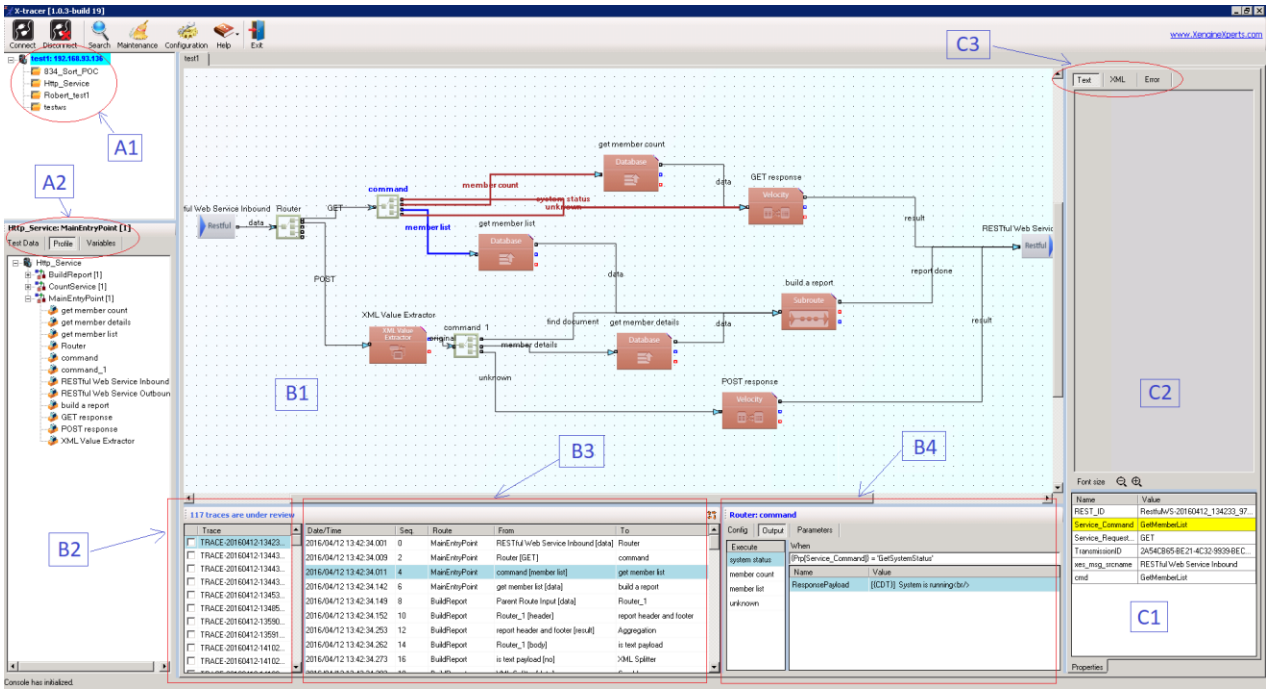


When all necessary values are provided you can press “Connect” button to establish connection to the designated server. The settings of this connection are saved at this point and will be available when you attempt to use this connection in the future.

In case of successful connection X-tracer will make an attempt to discover the profiles and all associated information and make the profile and its tracer available for navigation.

Now let’s take a closer look at the main screen.

Main screen



Areas of the main navigation screen are:

A1. Server connections and profiles discovered on designated server are shown in this area.

A2. Profile internals:

a) Test data used in testing as well as in QA cycles (regression and integration testing, etc.)

b) Profile outline including all routes and associated components

c) All variables (internal properties, environment variables and macros) that are used and referenced by all components of the entire profile.

B1. Main view of the route

B2. Tracers that have been discovered on designated server. Each tracer is marked by date/time

B3. Trace steps of the tracer in focus

B4. Internals of the component in focus:

a) Configuration values

b) Component outputs and associated settings/values

c) Parameters of components (such as “Velocity”) used as API values

C1. State of the exchange message properties for the trace step in focus

C2. State of the exchange message data for the trace step in focus

C3. Exchange message data in plain text and XML format, if applicable. Error information, if encountered at the step in focus is shown in this area as well.

Component navigation

By clicking a component you would cause several things to happen:

1. Focus is established on that component and all of its internal information is retrieved and presented
2. Its name as well all of its output connectors are highlighted
3. Tracer steps are inspected to establish a logical connection. Please note that only the first occurrence of the reference to this component in tracer steps is looked up, an action that is different from the one that takes place when you click on the tracer step (refer to the next section).

   NOTE: We would also like to bring your attention at this point to the coloring logic:

   a. Output connectors that are referenced anywhere in the tracer, i.e. they have been active at run-time, are colored in blue
   b. All other output connectors are considered inactive meaning they haven't been active at run-time and therefore they are colored in red

4. If the first trace step associated with this component is located the focus is set on it and the exchange message internals (properties and data) are retrieved and presented
5. If the type of exchange message is XML the "XML" tab becomes available for viewing of the formatted XML data
6. If the tracer step in focus caused an error, i.e. the "error" output was activated, all relevant error data is automatically presented in "Error" tab

Tracer navigation

Two methods could be used to navigate through the tracer steps:

1. Up and down arrow keys
2. Mouse clicks

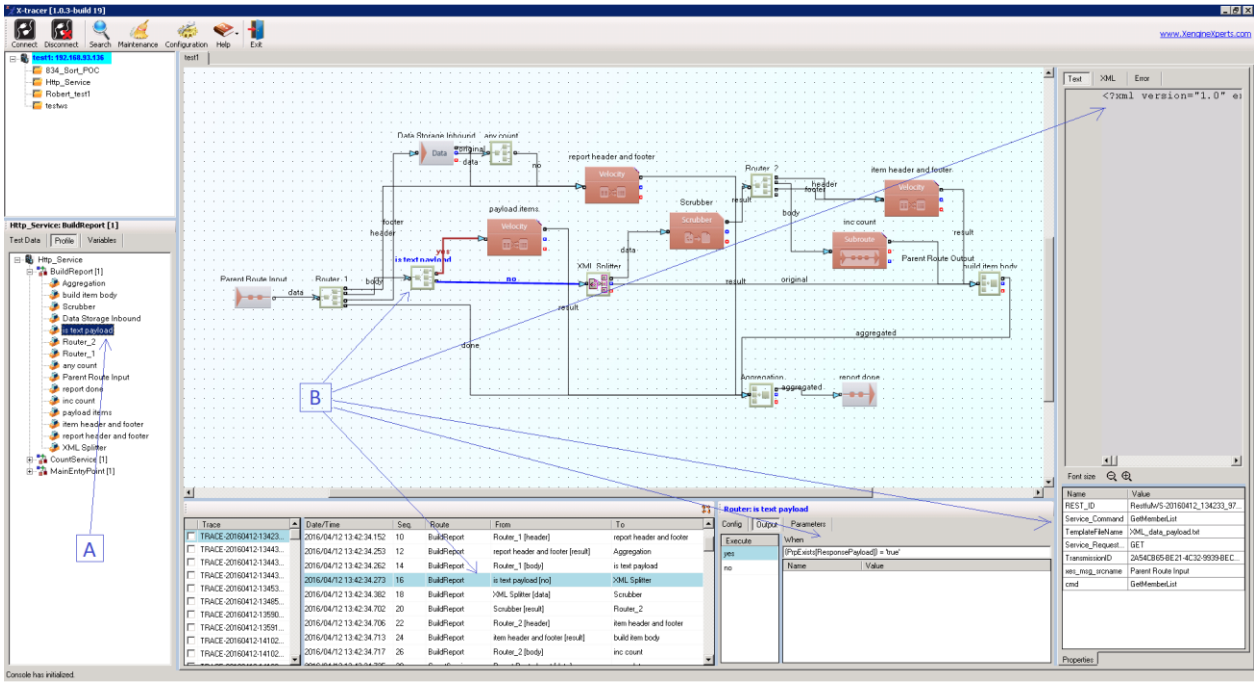
Employing either method produces the same result – focus is set on the selected step and the following activities occur:

1. Associated component is looked up in the route view
2. If the associated component is located in the route that is in focus the focus is set on this component, the associated output connector is highlighted in blue and all of the information that is pertinent to the exchange message and component is presented (refer to the previous section for more information)

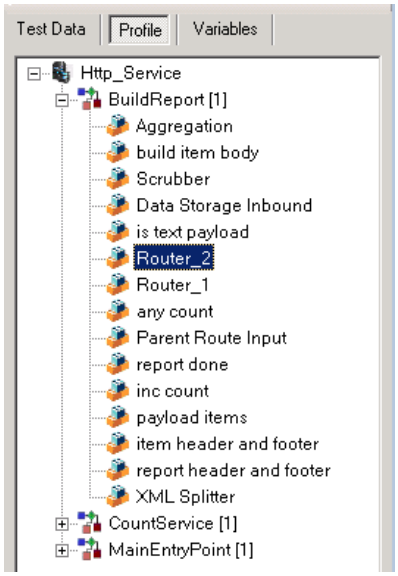
   NOTE: If the associated component is located in a different route, i.e. not the one that is in focus in the route view window then the route is automatically loaded and set in focus

Profile outline navigation

Another way to locate tracer steps and route components is to start at the profile outline.



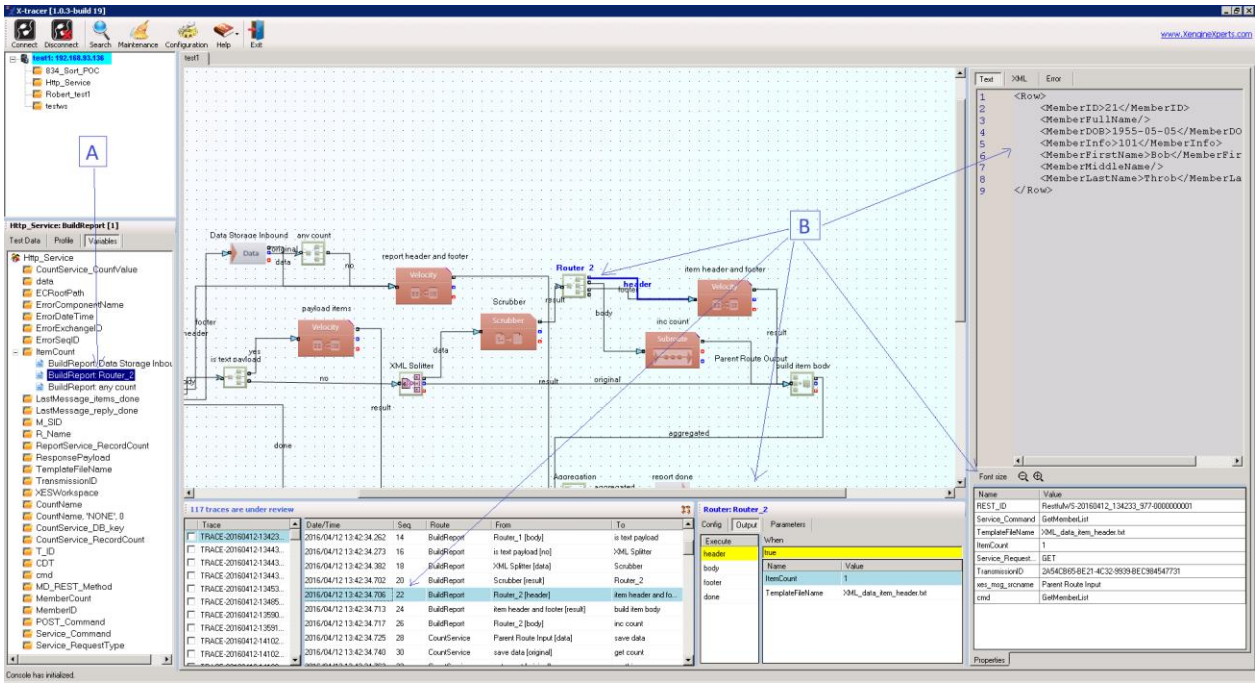
Here is what happens:



A. Start by clicking on one of the components at profile outline
B. X-tracer automatically locates
   - Component, focus is set in the main route view
   - Component's internal information (configuration, output settings, etc.)
   - Tracer step
   - Exchange message properties
   - Exchange message data

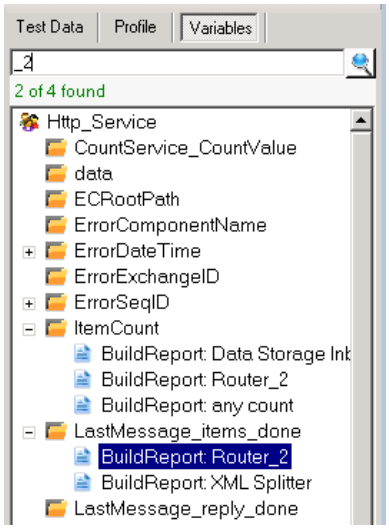
Navigation with variables

Yet another way to navigate in the main screen is to start with a variable.



Here is what happens:

A. Start by locating a variable and use reference to the component of interest
B. X-tracer automatically locates all of the pertinent information (refer to previous section)



A symbol search tool is provided to assist you in locating the variable you are interested in.

Click 

button at the top panel to activate the search facility. Focus is then set in the search text box, type some text that would match one or more variables and click  button or simply hit "Enter". Use F3 and Shift-F3 to move forward and backward in the list of matched variable names.

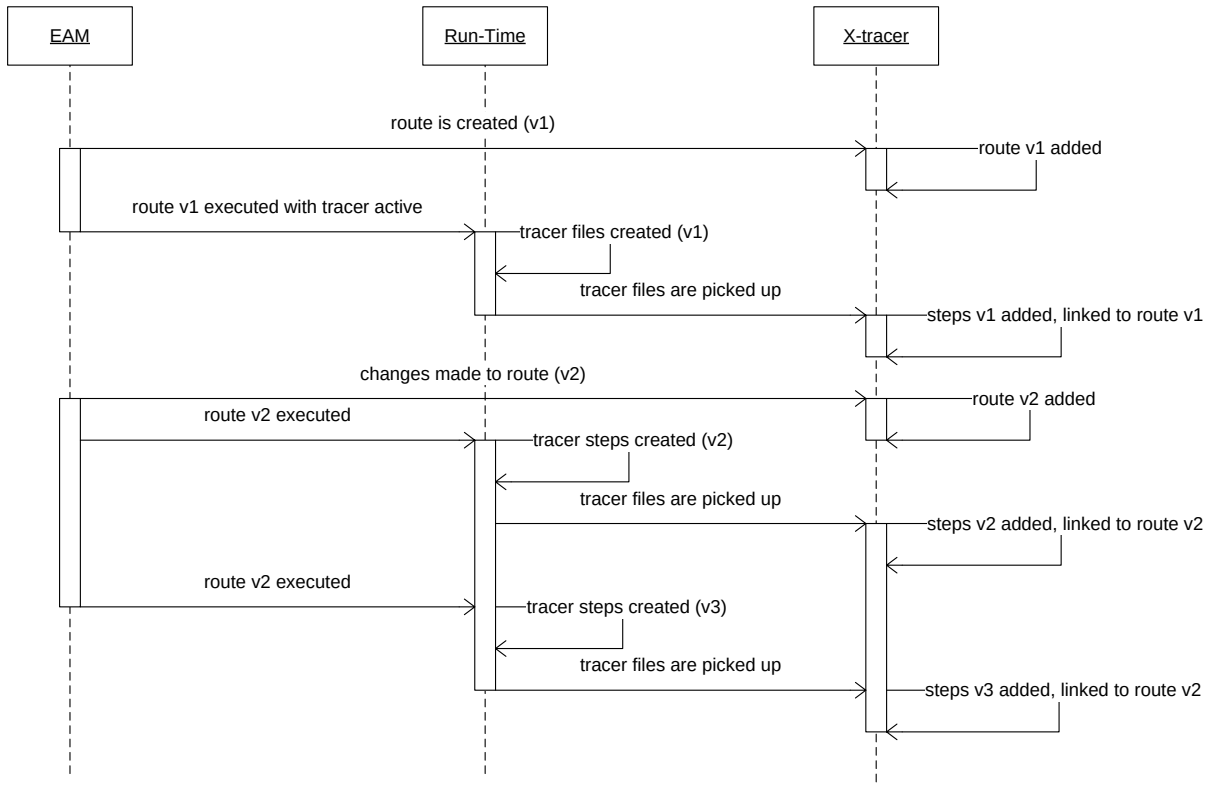
Synchronizing and versioning

When navigating the routes and tracer steps two questions are usually asked:

1. what happens when the user changes the route code and
2. what happens when new tests are conducted

The answer to these questions lies in the core of X-tracer. This is not a stationary product. It is dynamic.

Because the tracer steps of a particular execution run are only meaningful within the context of the route that produced them, the code and tracer steps are synchronized and versioned. When the route code is changed it is automatically added to the X-tracer system and registered as the current version and all references to the tracer steps are not propagated beyond the timeline of this registration. The following example illustrates this concept.



In this example versions of the route and steps are identified as v1, v2 and v3.

- Route v1 is linked only to steps v1
- Route v2 is linked only to steps v2 and v3

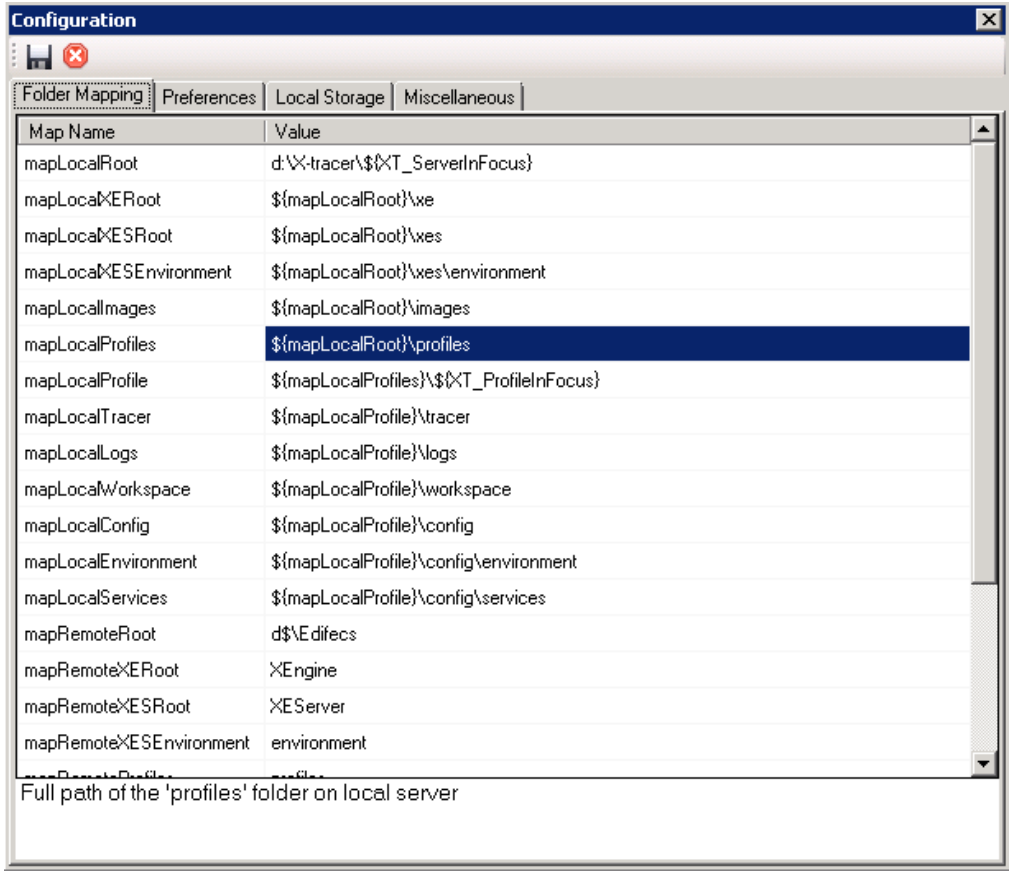
What it means is that steps v2 and v3 and not available for inspection when you view route v1 and so on.

Configuration

This section describes what type of configuration is available in X-tracer.

Folder Mapping

Below is a screenshot of the configuration screen, with emphasis on folder mapping of both local and remote servers.

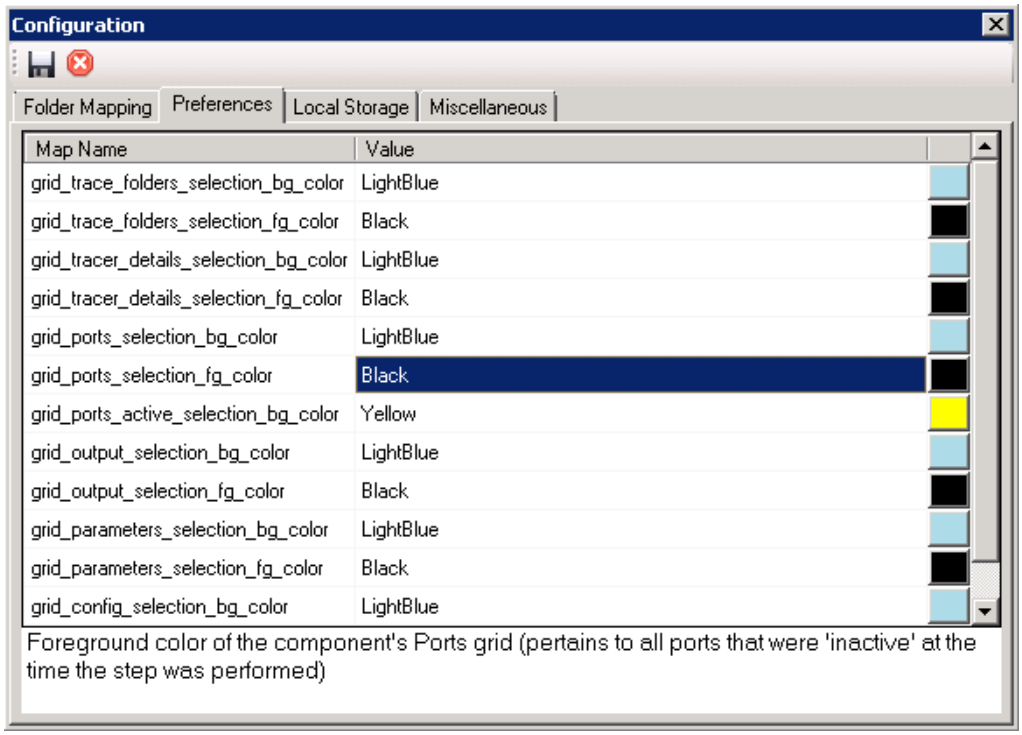


NOTE: please do not make changes on this screen if you are not sure about the physical layout of folder structures. Providing incorrect settings to any of the parameters could render X-tracer product not functioning properly.

If you are not sure, contact you system administrator or our support team for assistance.

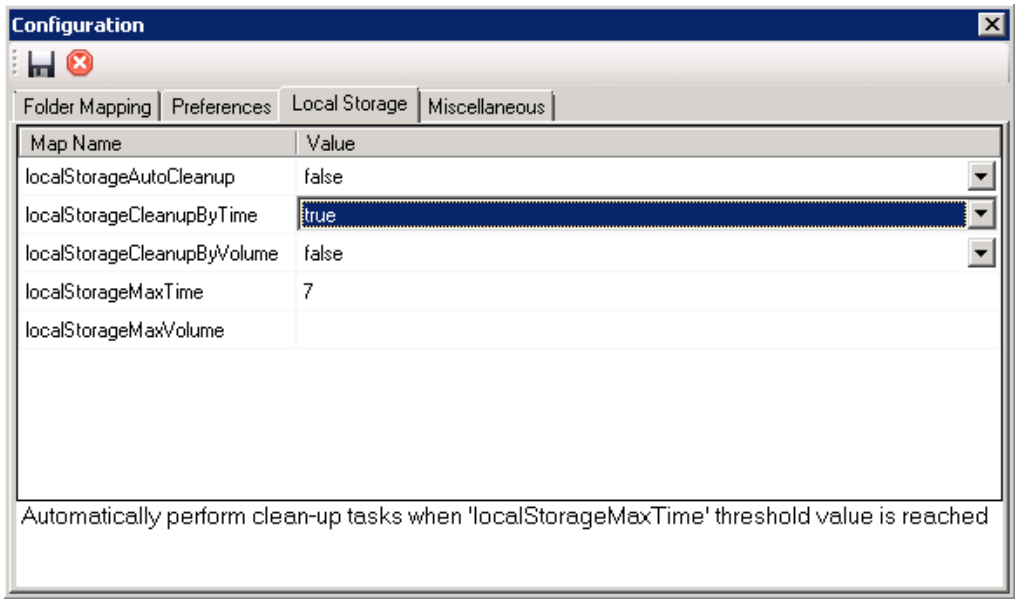
Preferences

Below is a screenshot of the configuration with emphasis on the user preferences such as color schemes.



Local Storage

Below is a screenshot of the configuration with emphasis on the local storage management.



Miscellaneous

Below is a screenshot of the configuration with emphasis on the miscellaneous functions.