

# **PITCH WEB VIEW™**

---

**User's Guide for v 2.2**

# Contents

<b>1. USING PITCH WEB VIEW™</b>	<b>3</b>
1.1 INTRODUCTION	3
1.2 INSTALLING AND RUNNING THE PITCH WEB VIEW™ BUNDLED WEB SERVER	4
1.3 ACCESSING PITCH WEB VIEW™ FOR THE FIRST TIME	4
1.4 PITCH WEB VIEW™ CONFIGURATION	4
1.5 INSTALLING AND DEPLOYING PITCH WEB VIEW™	5
1.6 PITCH WEB VIEW™ WALKTHROUGH	5
1.7 USING CUSTOM IMAGES	18

# 1. Using Pitch Web View™

## 1.1 Introduction

Pitch Web View™ is a brand new web-based user interface for working with Pitch products in a standard web browser. Pitch Web View™ is available for Pitch pRTI™ version 4.4 and later and Pitch Commander™ version 3.0 and later. Some of the advantages of Pitch Web View™ are:

- Pitch Web View™ is a standard based web application and is compatible with the common desktop web browsers and mobile devices. No plugins are needed.
- Pitch Web View™ uses the HTTP protocol for communication between the web browser and the web server, so no special firewall configuration is needed.
- Pitch Web View™ is distributed as a web application archive (WAR) and can easily be deployed on web application servers supporting the format, such as Apache Tomcat.

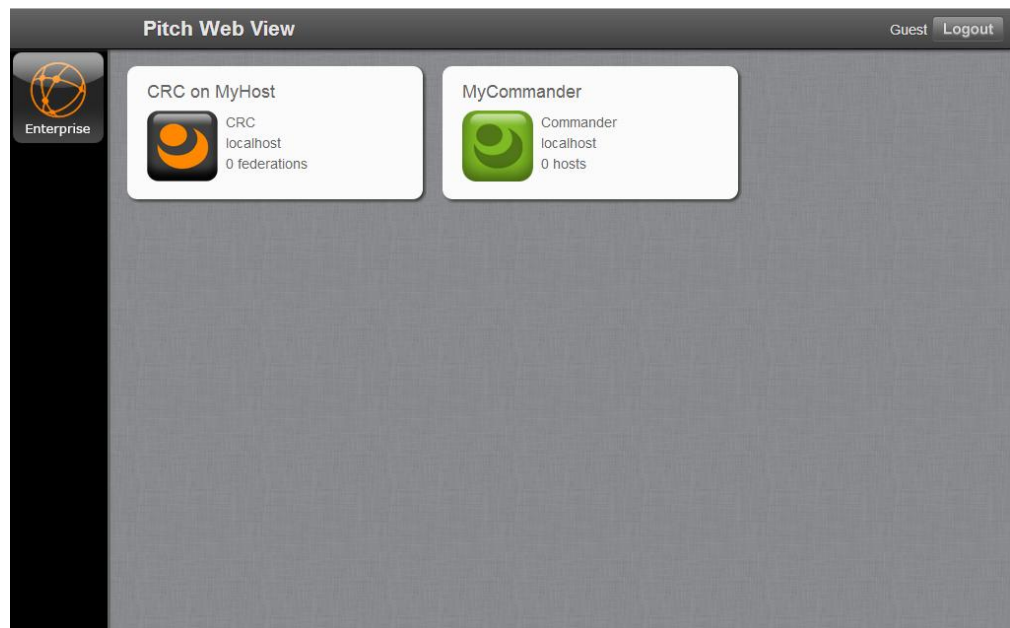


Figure 1 – Pitch Web View

The practical benefits of using Pitch Web View include:

- The information provided in Pitch pRTI™ Explorer and Pitch Commander™ is made easily accessible from all sites and computers during a distributed federation execution.
- Configurable security allows controlled access to key resources in your Pitch pRTI federations and Pitch Commander™ projects.
- Pitch Web View allows users to interact with Pitch pRTI™ running in service mode on a headless server.

## 1.2 Installing and running the Pitch Web View™ bundled web server

Pitch Web View™ is bundled with a web server which can be used to launch the web application locally on your computer. We do not recommend using the bundled web server in an environment with high demands on scalability and reliability.

To install Pitch Web View™ with the bundled web server, launch the installation executable and follow the steps in the installation wizard:

- Step 1: Welcome to the installation wizard. Click Next.
- Step 2: Read and accept the license agreement.
- Step 3: Select the destination directory.
- Step 4: Choose whether to create shortcuts in the start menu folder.
- Step 5: Product is installed.
- Step 6: Installation finished. Click Finish to exit the installer.

To make Web View accessible from a web browser, do the following:

- 1 Start the Web View server from the start menu or through the start scripts in the installation's root directory.
- 2 Start any pRTIs or Commanders you wish to access through Pitch Web View.
- 3 Start a web browser and go to <http://localhost>.

Web View will by default try to connect to a pRTI CRC and a Commander running on the same computer as the server.

In case this does not work, error messages can be found in the Web View *log* directory. The main log is saved to the file *WebViewLog.txt*. Exceptional errors and detailed Java runtime information is saved to the files *stderr.log* and *stdout.log*.

## 1.3 Accessing Pitch Web View™ for the first time

**IMPORTANT:** The first time you browse to Web View you must log in as administrator and configure the passwords for the different user types. The default password for the administrator account is "admin", and we strongly recommend that you change this directly after installation.

## 1.4 Pitch Web View™ Configuration

Web View may be configured by editing the two available configuration files located in the *conf* subdirectory.

### *pitchwebviewlauncher.settings*

This configuration file is used by the bundled web server launcher. This file can be used to control which port the web server should use.

Web View uses port 80 by default. Before configuring it, you need to know if there is any web server already running on your system, which ports it uses, if it can run in parallel with another web server and what permissions a web server requires on your operating system. Please refer to the documentation for your operating system and any existing web server software currently installed.

**WebView.settings**

This settings file is used by the web application itself. It contains properties for controlling things like passwords, address to the CRC etc. It is used directly when running the bundled web server. When deploying Web View on an application server, it is automatically extracted from the WAR-file.

**1.5 Installing and deploying Pitch Web View™**

The bundled web server can be started locally on your desktop, as described in previous sections.

How to deploy Web View on a web application server may vary depending on the server. The WAR-file to be used for deployment on the application server is distributed as a stand-alone product. It can also be found in the *lib* subdirectory of an installed Pitch Web View™ server bundle. The WAR-file is called **webview.war**.

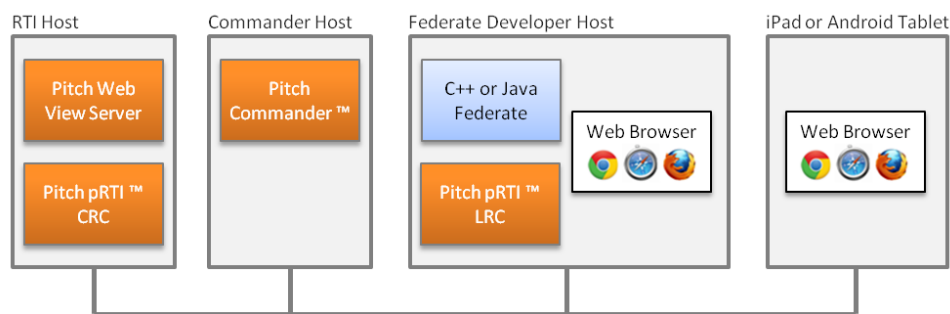


Figure 2 – Pitch Web View typical deployment

**1.5.1 Updating the Pitch Web View™ WAR file**

To upgrade Pitch Web View™ you normally just have to replace the old WAR file with the new one. This may vary depending on the web application server you use.

If you upgrade Pitch Web View deployed on the bundled web server you should first remove the *bin/images* folder from the installation directory. It will be replaced with a new version from the new WAR file the first time the server runs. Make sure to back up any images you've created yourself, and restore them after the upgrade!

NOTE: When upgrading Pitch Web View™ on the bundled web server, the settings file, *WebView.settings*, will be overwritten. It is recommended to make a backup copy of that file and then replace the file from the new installation with the backup if you want to preserve your old settings.

**1.6 Pitch Web View™ walkthrough**

When you have configured the Web View server you can connect to it with a web browser. The Web View user interface is available for common desktop web browsers, tablets and mobile phones. This chapter describes the user interface as seen in a desktop web browser. Note that depending on your network configuration the address to enter in the web browser may look like below:

commander.mycompany.com (standard URL)  
 192.168.0.44 (IP number)  
 rti.mycompany.com:8080 (URL with a specific port)

Many users can connect to Web View at the same time. During the integration phase of a federation development process it is recommended that all federate developers can connect and check the status of their federate.

### 1.6.1 Logging in

The first thing that you need to do when accessing the Web View user interface is to log in.

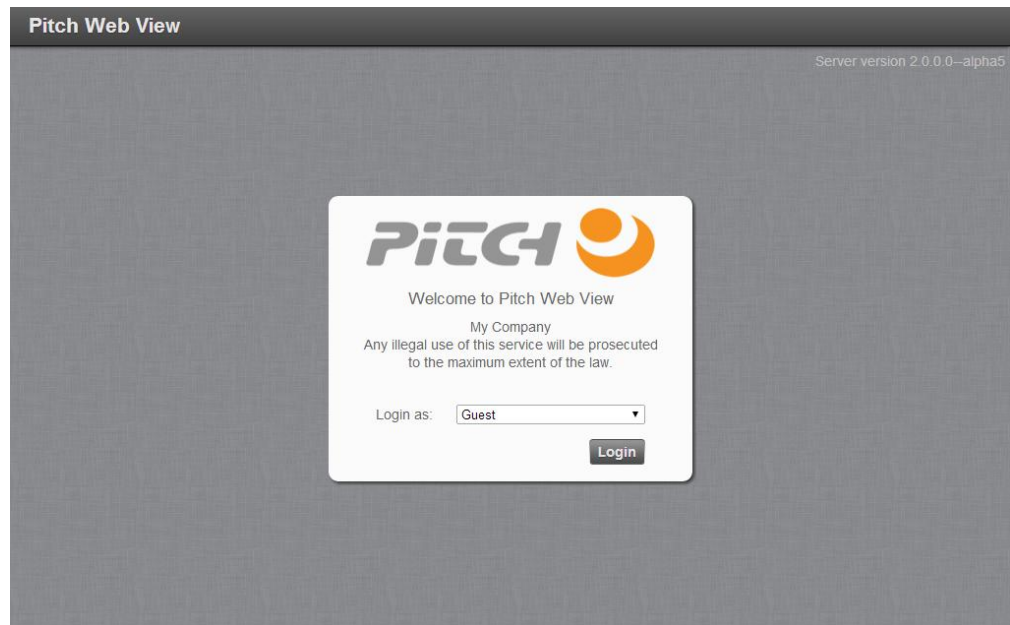


Figure 3 – Login screen

You may log in as one of the following roles: Guest, User, Federation Manager or Administrator. All of these logins, except for Guest, require a password. The different roles have the following features:

Role	Features
Guest	Can view Pitch pRTI™ and Pitch Commander™ data. No password required. Guest login may be disabled.
User	Same as Guest but requires password.
Federation Administrator	Can also do actions like resigning federates, run scripts and destroy federation execution.
Administrator	Can do everything Federation Admin can do but can also configure which Pitch pRTI™ and Pitch Commander™ to connect to. The Administrator can also change passwords for all users, manage sessions and more.

### 1.6.2 Looking at the Enterprise

Once you have logged in you will see the start screen for Web View.

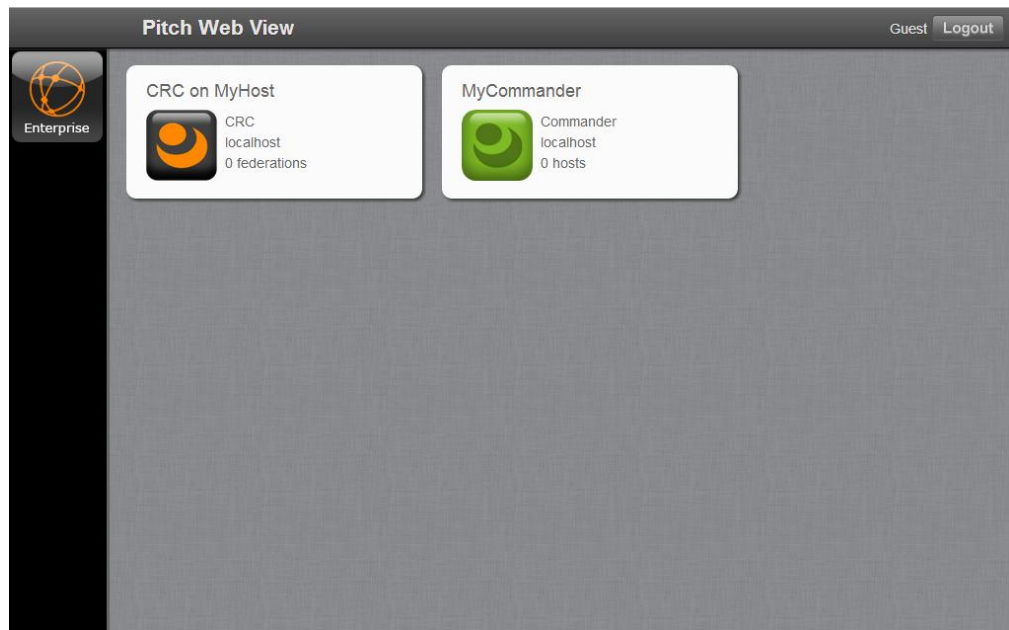


Figure 4 – Main Web View screen

In the far right of the navigation bar, located in the top, you can find the “Logout” button. To the left you have a vertical menu.

In the center there may be a number of tiles, one for each pRTI and Commander that is configured in the settings. In this case we see one pRTI and one Commander both running locally. If Web View fails to connect to a part of your enterprise, that resource will be greyed out and listed as not connected.

### 1.6.3 Looking at the RTI

If you click on a Pitch pRTI™ tile you will access the start screen for the RTI CRC.

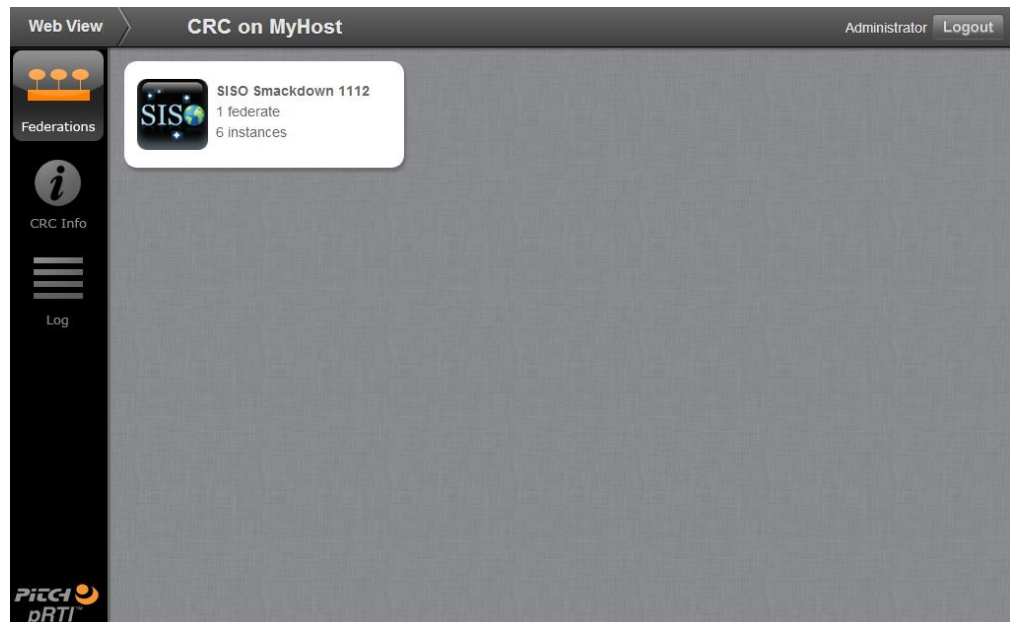


Figure 5 – RTI screen

The Federations view may have a number of tiles, one for each federation that is running on the RTI. In this case we see the “SISO Smackdown 1112” federation.

In the navigation bar you can see the name of the RTI (in this case CRC on MyHost) as well as the “Logout” button. If you want to return to the Web View Enterprise view you can click on “Web View” in the top left corner. To the left you have three vertically placed buttons with different views for the RTI: Federations, CRC Info and Log.

By selecting the second button to the left, “CRC info” we get to the following screen:

Configuration	
<b>General</b>	
Name:	CRC
Running since:	Thu 16:41
<b>Networking</b>	
CRC-address:	tcp:192.168.15.2/8989 host:192.168.15.2 address:192.168.15.2/8989
Advertised IP:	tcp:192.168.15.2/8989 host:192.168.15.2 address:192.168.15.2/8989
CRC-port:	0
Mode:	Direct
Booster IP:	-
BoosterName:	-
Use multicast:	No
Multicast-address:	229.229.229.228
Multicast-port:	8990

Figure 6 - CRC info screen

Here you can see the version of the RTI and license information such as the maximum number of federates. We can also inspect the current network configuration.

You can also access a third RTI screen that provides a list of log messages (not shown in this document).

### 1.6.3.1 Looking at a Federation

Selecting the “SISO Smackdown” federation tile in the main window will open the federation overview which contains detailed information about the federation.



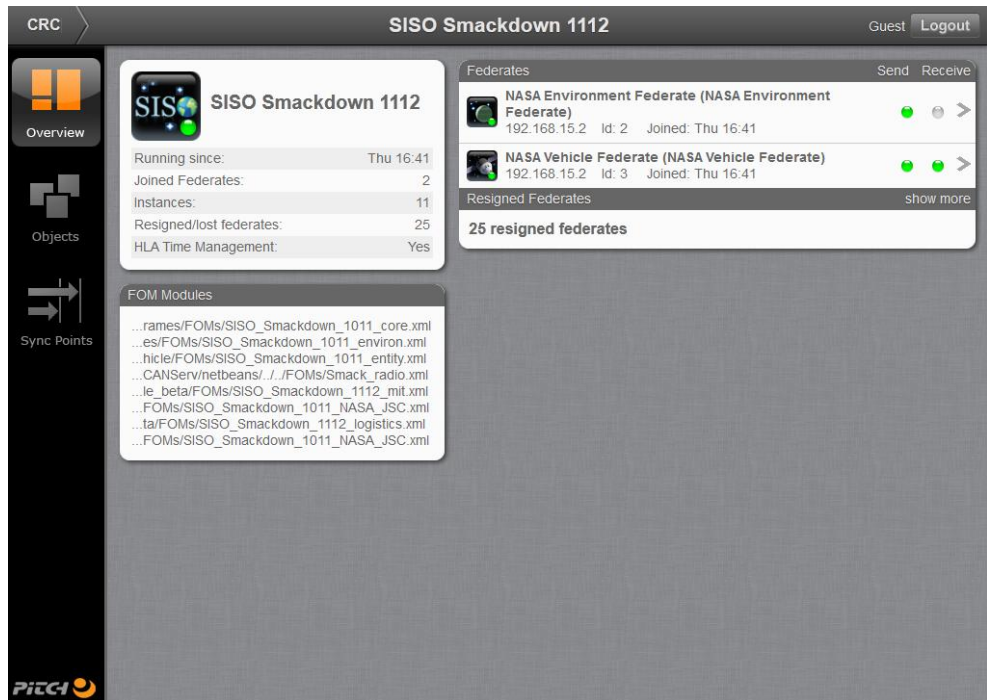


Figure 7 – Federation overview screen

The main window contains three panels with information on the federation. The top left panel contains an overview of the federation with information such as the number of federates and instances. Below that panel is a list of FOM modules used in the federation. To the right there is a list of the currently joined federates as well as an optional list of resigned federates. Each federate listing shows the IP address that it has joined from, the ID and some status lights showing if it is currently sending and/or receiving data.

The navigation bar shows the name of the selected federation. On the left side there are four buttons: Overview, Federates, Objects and Sync Points.

If you want to go back to the RTI, just use the "CRC" link in the navigation bar.

Now let us have a look at the objects in the federation.

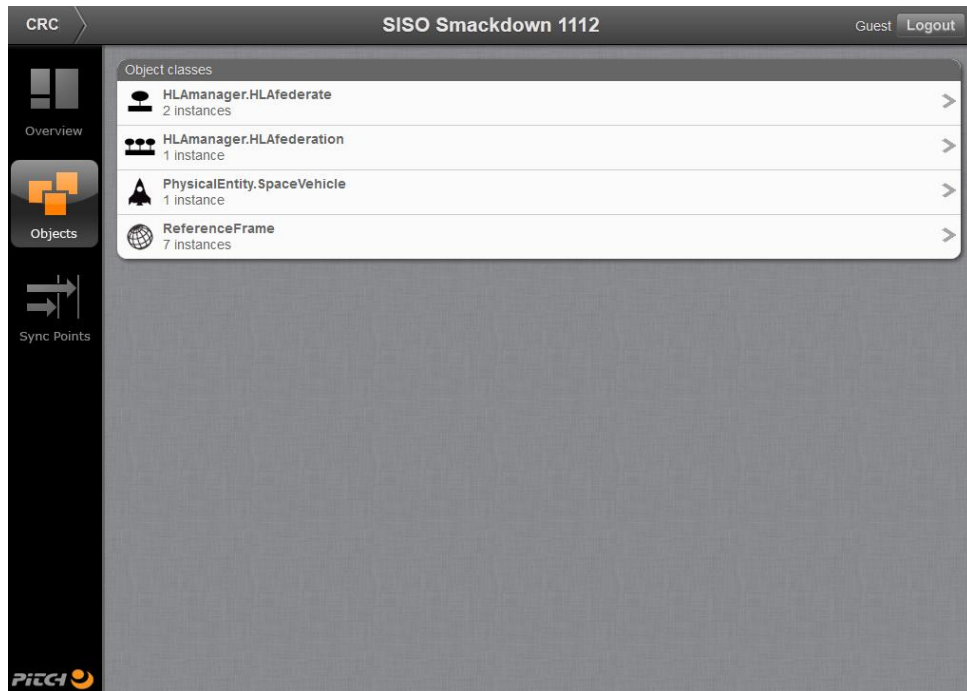


Figure 8 – Federation objects screen

Here we can see a list of the objects classes for which there are objects in the federation, as well as how many objects there are for each class. You can select an object class to get a list of object instances (not shown here).

Selecting the Sync Points button will bring up the view below.

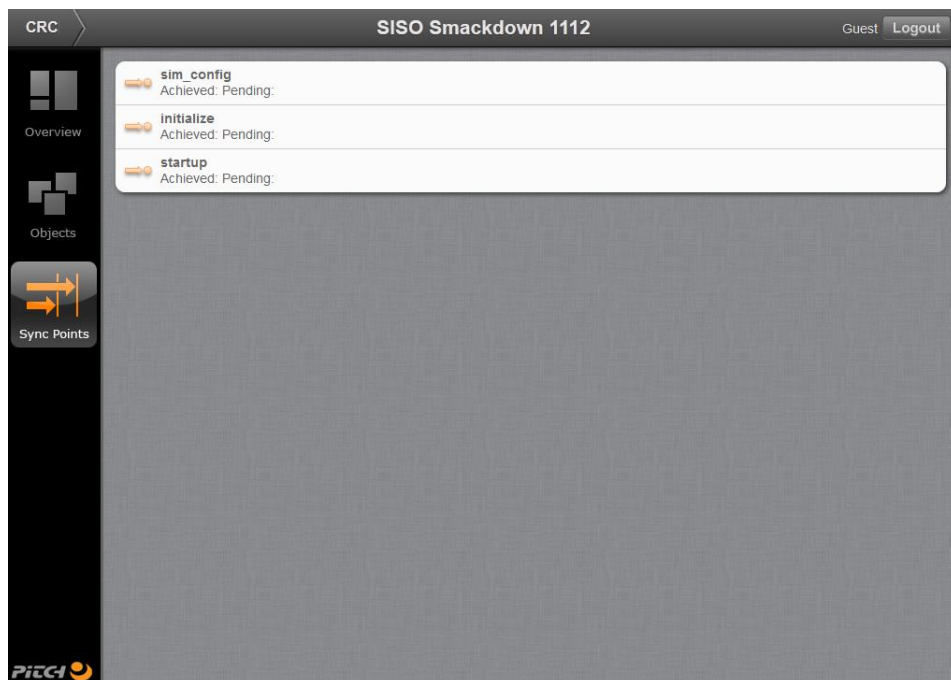


Figure 9 – Federation synchronization points screen

In this view we can see which synchronization points are registered in the federation and also their status.

### 1.6.3.2 Looking at a Federate

Now let us go back to the Federation overview and select one of the available federates. This will now bring up the federate overview screen.

The screenshot shows the 'NASA Environment Federate' overview screen. The main window contains several panels:

- Overview Panel:** Displays technical information:
  - Federate ID: 2
  - API: IEEE 1516-2010 / C++
  - LRC Version: Pitch pRTI Evolved 4.4.0.0 build 9999
  - Joined: Thu 16.41
  - Reg instances: 7
  - Disc instances: 2
  - Networking:**
    - IP Address: 192.168.15.2
    - Advertised IP: tcp:192.168.15.2/6000, udp:192.168.15.2/5000, host:192.168.15.2, address:192.168.15.2/6000
    - Use Booster: No
    - Booster IP:
    - Booster Name:
- Activity Panel:** Shows current rates and accumulated statistics:
  - Sending Updates: 6/s (498688)
  - Receiving Updates: 0/s (0)
  - Sending Interactions: 0/s (0)
  - Receiving Interactions: 0/s (0)
- State Panel:** Lists object life cycle states:
  - Joined
  - Published/Subscribed
  - Registered Instances
  - Updated/Sent
  - Reflected/Received
  - Resigned
- Time Management Panel:** Shows:
  - Regulating
  - Constrained
  - Federate Time: 75369000000

The left navigation bar includes 'Overview', 'P/S Declarations', and 'Objects'. The top navigation bar shows 'CRC', 'SISO Smackdown 1112', and 'NASA Environment Federate'. The user is logged in as 'Guest'.

Figure 10 – Federate overview screen

In the main window we can see panels showing technical information about the federate such as federate ID, API used, object instance statistics and network configuration. The panels in the right hand side of the main window show three types of information:

- Activity statistics for updates and interactions sent and received. Both current rate and accumulated statistics are shown.
- State, indicating the object life cycle of the federate. Here you can see if the federate has joined, publish/subscribed, registered instances etc.
- Time management information, showing if the federate is regulating, constrained as well as the current federate time.

The navigation bar shows the name of the federate that we are looking at. On the left side there are three buttons: Overview, Declarations and Objects. If you want to go back to the RTI or the Federation, just use the CRC link or the Federation link in the left side of the navigation bar.

Now we will have a closer look at the declarations.



The screenshot displays the Pitch Web View interface for the NASA Environment Federate. The top navigation bar includes 'CRC', 'SISO Smackdown 1112', and 'NASA Environment Federate', along with a 'Guest' user and a 'Logout' button. The left sidebar contains navigation options: 'Overview', 'Declarations' (highlighted with a 'P/S' icon), and 'Objects'. The main content area shows a table of federate declarations:

Pub	Sub	Object Class
HLAobjectRoot.ReferenceFrame		
P		HLAprivilegeToDeleteObject
P	S	name
P	S	parent_name
P	S	rotational_state
P	S	time
P	S	translational_state

Below the object class table, there is a section for interaction classes:

Pub	Sub	Interaction Class
No interaction declarations		

Figure 11 – Federate declarations screen

Here you can see the object and interaction classes the federate is publishing and subscribing to.

Clicking on the Objects button will bring up a view showing the object instances that this particular federate has registered or discovered.

## 1.6.4 Looking at the Pitch Commander™

If you click on a Commander tile you will see the start screen for the Commander.

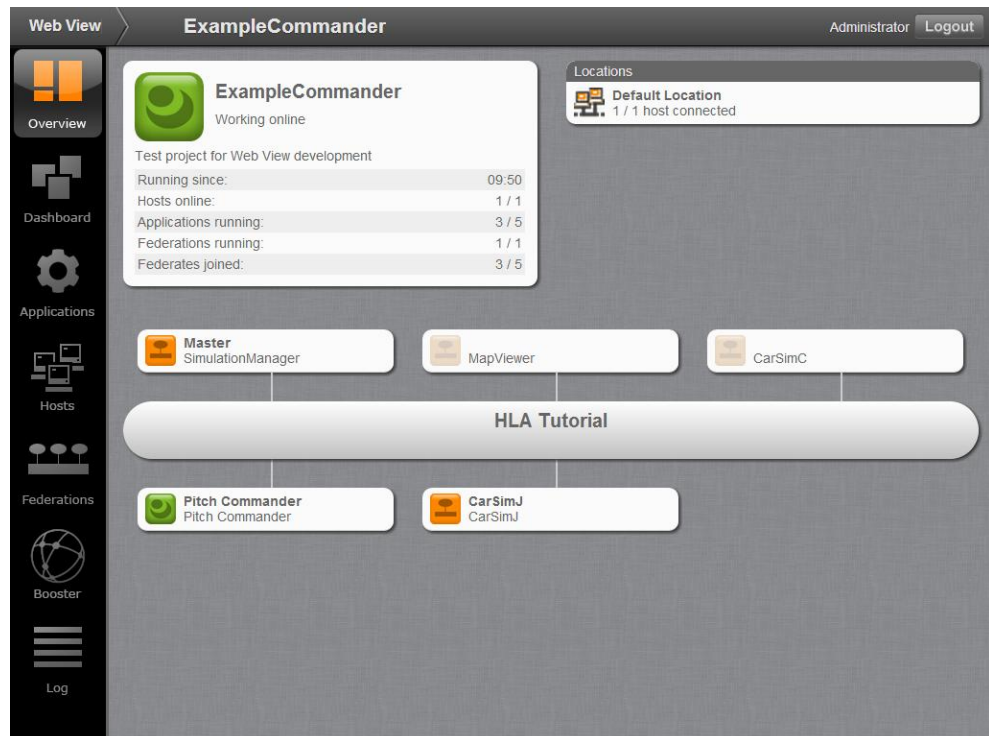
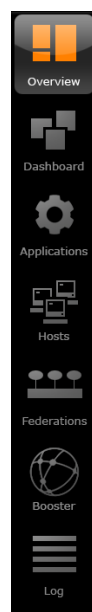


Figure 12 – Commander screen

The main window contains general information about the Commander, a list of all the available locations and lollipop graphs for each monitored federation.

In the navigation bar you can see the name of the Commander (in this case MyCommander) as well as the Logout button. If you want to return to the Pitch Web View™ Enterprise view you can click on “Web View” in the top left corner.

To the left you have seven buttons with different views for the Commander:



**Overview:** An overview of the current state mentioned earlier.

**Dashboards:** All dashboards defined in your project.

**Applications:** A list of all applications on all hosts in your project.

**Hosts:** A list of all hosts, grouped by location.

**Federations:** A view with all federation lollipops.

**Booster:** List of all boosters configured in your commander project.

**Log:** A list of recent log messages. It is also possible to download a file with all log messages.

These views will now be explained in detail.

### 1.6.4.1 Applications

In the applications view there are two lists: one for Scripts and one for applications. If you are logged in as Administrator or Federation Manager you can run scripts and start or stop the applications. If you don't have permission the start/stop buttons will be disabled.

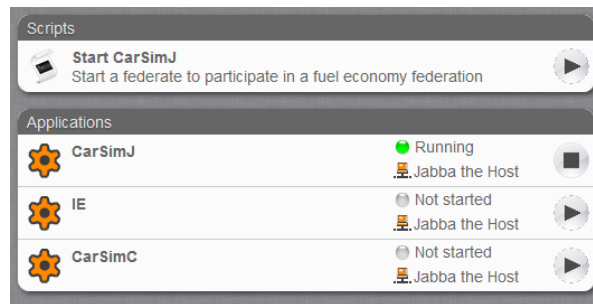


Figure 13 – Script and Application lists

### 1.6.4.2 Hosts

The Hosts button will open a view containing a list of all hosts controlled by the Commander. The hosts are grouped by location.

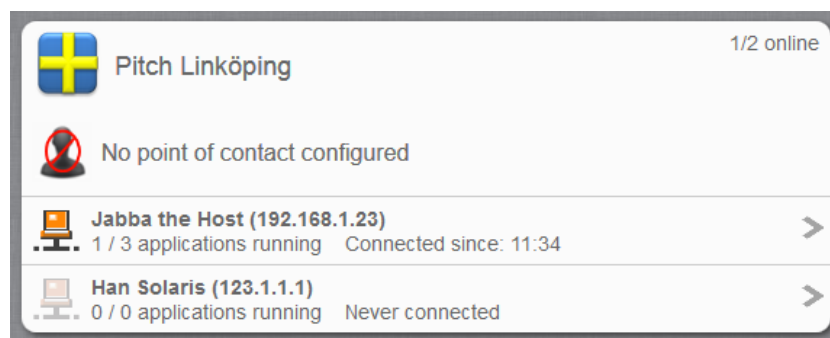


Figure 14 – Location from hosts list

### 1.6.4.3 Federations

By clicking on the Federations button, a view showing all federations monitored by the Commander will be opened. If you click anywhere on a lollipop graph you will be shown detailed information on the chosen federation.



Figure 15 – Federate lollipop graph

#### 1.6.4.4 Pitch Booster™

By selecting the Booster button you can view basic information on the Boosters added in your Commander project.

#### 1.6.4.5 Dashboards

The Dashboards view contains all the Dashboards created in your Commander project.

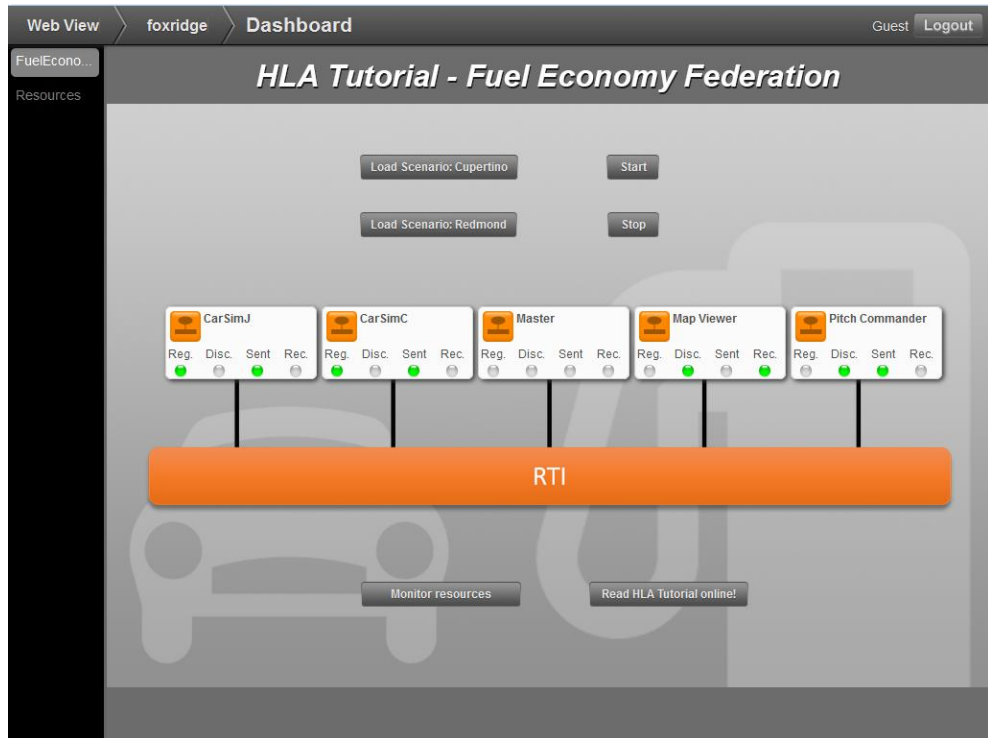


Figure 16 - Dashboards

#### 1.6.4.6 Log

You can access Commander log entries by clicking the Log button.

#### 1.6.5 Configuration

We will now look at the configuration screens that are only available to the administrator. There are three configuration screens:

- Settings
- Sessions
- Web View Log

Let's look at the Settings screen.



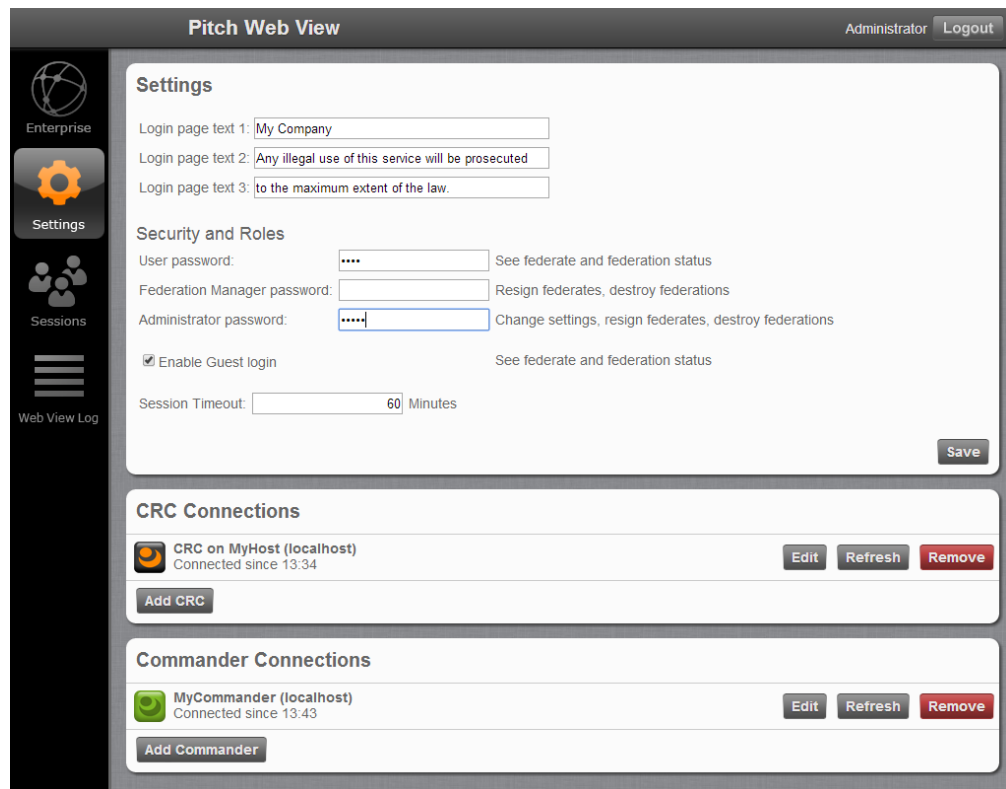


Figure 17 – Web View settings screen

Here you can configure a number of settings:

- The greeting message on the log in screen.
- Passwords for the three roles: User, Federation Manager and Administrator.
- Whether "Guest login" is allowed or not.
- The session timeout. If you have many guests accessing Web View you may consider setting a short timeout for example 20-60 minutes. If you have Web View shown on a common display as part of the exercise for continuous monitoring you may consider setting it to a higher value.
- The pRTI CRC connection
- The Commander connection

For maximum security you should disable "Guest login", apply strong passwords for the other roles and set up a short session timeout. The passwords are encrypted before being saved in the Web View server so there is no way of restoring a lost password. Instead, it must be reset by the administrator.

To add a new CRC connection, press the "Add CRC" button. In the dialog, either select the CRC you want to connect to from the list of detected CRCs, or manually enter the connection info. If you are connecting to a CRC on your local network, only the IP address is needed. If you are connecting through a Booster, the name of the CRC and both the internal IP address and port of the Booster are necessary. You can add a passkey as well. If the resource does not require a passkey just leave this field blank.



**Choose a CRC to connect to**

- crc.Fangorn  
192.168.1.43
- CRC on TASHKENT  
192.168.3.51
- DhalsimCRC  
192.168.1.40
- CRC  
192.168.3.207
- CloudRTI  
192.168.50.151

If the CRC you want to connect to doesn't show up in the list try entering the connection information below

Direct  Booster

Host:   
PassKey:

CRC name:   
Booster host:   
Booster port:   
PassKey:

Ok Cancel

Figure 18 – Add CRC dialog

The dialog to add a Commander is identical to the “Add CRC” dialog.

Using the refresh button will force Web View to make a fresh connection to the Resource.

The administrator can also inspect the current user sessions.

CRC1 Administrator Logout

User	Remote Address
Guest	192.168.0.1
Administrator	192.168.0.1

Refresh Clear all Sessions

Federations  
CRC Info  
Log  
Settings  
Sessions  
Web View Log  
Pitch

Figure 19 – Web View user session screen

In the Sessions screen you will see a list of all active user sessions, which user role they have and from what IP address they have connected. This view needs to be refreshed manually by pressing the Refresh link. You may also flush all sessions which is particularly useful if you have a long session timeout. Any active user can then simply login again.

The last view available to the administrator is the Web View Log

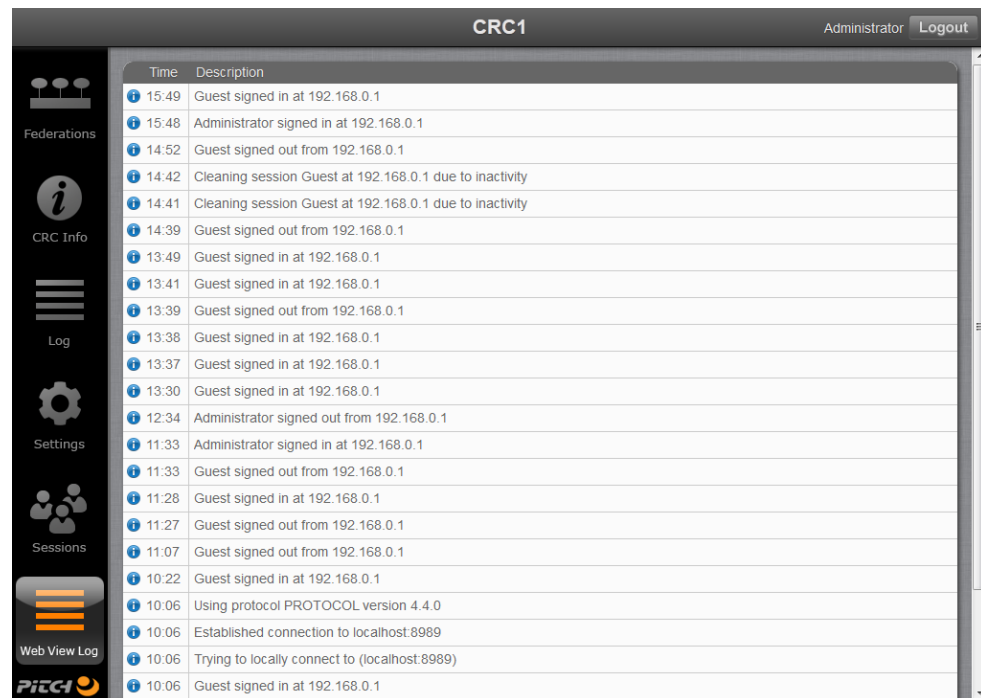


Figure 20 – Web View Log screen

This view contains a log from the server and can be used for troubleshooting Pitch Web View™ issues.

## 1.7 Using Custom Images

It is possible to use custom images for federates, federations and object classes in Pitch Web View™.

The custom images are kept in a directory named *images* in the working directory of the web server (*bin* subdirectory for the bundled web server) and in separate folders for each category. To add or change images just change the images in this directory and restart the application server (restart the Pitch Web View server if using the bundled one). Note that when a new WAR-file is deployed on an application server, this directory is overwritten. Therefore **it is important to keep a backup of your images library when updating Web View.**

The image used for a federation item (federate, federation or object class), is based on the name of the federation item, but partial matching is also done. For example:

We have two federates called “Pitch Talk” and “Pitch Recorder” in the federation. In the *images/FederateImages* directory there are two images called “Pitch Talk.png” and “Pitch.png”. The federate “Pitch Talk” will then be displayed using the “Pitch Talk.png” image, whose name matches the image name exactly. The federate “Pitch Recorder.png” does not have an exact matching image but will be displayed using the “Pitch.png” image since it matches the start of the federate name.

Images may be encoded in PNG, GIF or JPEG format, and the following file name extensions will make them considered for matching federation item names: “png”, “gif”, “jpg” and “jpeg”.

It is recommended that images have a size of at least 64x64 pixels, but 128x128 pixels will make them look the best.

When starting the bundled web server for the first time, the image directory will be created in the *bin* subdirectory of the installation.

If using a different application server, the image directory will be extracted along with the contents of the WAR file in the directory of the deployed web application on the server.