ffead-cpp

c++ framework, c++ web framework, c++ application framework, c++ security framework, c++ rest framework, c++ soap framework, Framework for Enterprise Application Development, c++ web sites,c++ web applications, c++ driven web development - c++

Project Information

Project feeds

Code license
Apache License 2.0

Labels
application, ajax, web, orm, serialization, reflection, dependency, interpreter, Services, ffead, Messaging, Application, Server, injection, IOC

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General Discussion

Release Notes upcoming version 1.8

- CORS Filter support for corss origin resource sharing
- Changes to XML/JSON/Binary Serialization
- Moved common code to a new SerializeBase class
- Modified the AMEF Protocol classes for better binary serialization support
- Added support for handling namespaces and nested classes in Reflection
- Fixed the Date/DateFormat classes for all issues related to parsing/formatting/updating dates
- Added new Multipartcontent object for handling multipart requests
- Added gzip/deflate compression for responses
- Added chunked transfer encoding support
- Added Last Modified/If-Modified-Since header based cache support
- Moved request/response headers to a map instead of properties
- Fixed the HttpResponseParser class
- Fixed the JSONUtil class for error in json parsing
- Introduced a new LoggerFactory class to handle multiple loggers, fixed the Logger class
- Introduced Futures based Thread pooling support
- Fixed various web service issues/problems
- Introduced JobScheduler class for job scheduling
- Added a new CronTimer class for handling cron times
- Introduced stream based single/multi File upload support in Rest Controllers
- Added a few new html pages for testing/sanity
- Fixed the accpetance test related files
- Added a couple of new classes in the default app for testing new features
- Fixed the afc.js file to resolve existing issues
- Fixed an existing issue with namespace handling within the Element class
- Introduced new properties for connection keep-alive, transfer encoding chunk size, default content encoding method, max number of input headers and max file upload size to the server.prop config file
- Changed the web-service related template files for better web service support

Introduction

The framework is developed for rapid development of Enterprise application on the C++ platform. It is a c++ web framework, c++ application framework, c++ rest framework, c++ security framework and c++ soap framework all bundled into one. It consists of the following and is currently implemented for **LINUX/FREEBSD/WINDOWS(Cygwin)/SOLARIS**. It is the **first and only** C++ Application framework to provide **non-intrusive Dependency Injection and Business Driven Component Logic and POCO based Development**. Most of the features are controlled by configuration files.

Features

- Easy to use **View Framework**
- **SSL Support** available
- **Web Server** (Multi process, Multi Threaded – EPOLL based)
- Inbuilt Authentication handlers and **OAUTH** support
- Configuration driven URL mapping
- **Dependency Injection** (constructor and setter injection)
- **ORM** library (currently implemented for MySQL, Integrated with STL, Table mappings through configuration files –> One – Many, Many – Many ,One – One. The ORM Can be easily extended to other Databases).
- **SOAP Integration** (Web Service implementation through configuration file –> Methods in a C++ header file exposed as Web-Services)
- **REST** Controller framework (pretty URL's) and RESTFULL acceptance test framework
- **AJAX** Integration (Using property based configuration - On the lines of DWR for Java –> Just define C++ header files and Methods will be exposed as AJAX calls)
- **EJB styled Beans** (Remote and Local Interfaces exposed -> C++ files have the services, and the methods to be exposed are defined in a configuration file)

- **Universal Object type** for C++ (intelligent pointer - no need of extending any class – identifies the object type)
- Binary, XML and JSON based **Serialization** (Limited -> only for single level /no nesting of objects - header files required)
- **Reflection** (Limited –> header files required)
- **Dynamic C++ Pages** (Mix HTML and C++ code to produce run time views without web server restart)
- **Template Engine** and **Dynamic Views** generated from C++ objects.
- **Controller Pattern** (Implement controllers mapped with URL patterns to define custom behaviors)
- **Request/Response Filters** (Implement a chain of custom Filters for Pre/Post processing of request/response)
- **Thread Pool** Implementation
- **C++ Interpreter** (Limited support)
- **Rule based WEB** Behavior(idea can be expanded to other areas application wide)
- XML Parser (DOM Styled)
- Database Connection Pooling
- **Internationalization** support
- Utilities such as Timer, Logging, Property Files etc.
- File Upload
- FTP Server
- **ROLE based Security** features for Method access (Web Services, AJAX calls, C++ Bean service calls, Server URL's)
- **Module** for Integration of the framework with **Apache Web Server**
- **Method Invoker** Server for cross platform Method Invocation (A daemon per language/platform approach – XML based Serialization/De- Serialization)

Also hosted at https://github.com/sumeetchhetri/ffead-cpp

ffead-cpp

c++ framework, c++ web framework, c++ application framework, c++ security framework, c++ rest framework, c++ soap framework, Framework for Enterprise Application Development, c++ web sites,c++ web applications, c++ driven web development - c++

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AjaxConfig	Configuration for Ajax support ajax configuration cpp ffead	29 minutes ago	sumeet.chhetri@gmail.com
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ExampleThreadPoolUsage	Example Thread Pool Usage cpp thread pool scheduled priority direct ffead	Feb 2013	sumeet.chhetri@gmail.com
NewWebApp	Create a new application in minutes	Feb 2013	sumeet.chhetri@gmail.com
ExampleComponent	Example Component File ffead cpp example implementation component service business logic	Jul 2012	sumeet.chhetri@gmail.com
ExampledcpFile	An Example .dcp file ffead cpp dcp dynamic page	Jul 2012	sumeet.chhetri@gmail.com
MessagingConfig	Configuration file for Messaging Support ffead cpp messaging configuration topic queue	Jul 2012	sumeet.chhetri@gmail.com
FilterConfig	Configuration file for Filters cpp web filter configuration request response ffead	Jul 2012	sumeet.chhetri@gmail.com
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InstallationDirections

Installing ffead-server on GNU/Linux

Featured, Phase-Deploy

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GNU/Linux based Installation

- Follow **Windows/Cygwin Install** for directions on how to install on Windows and Cygwin
- Download the tar file and extract it to the location of your choice.
- Install **Unix-ODBC** and required odbc files for **MySQL** dependency
- Install **Open-SSL** as well
- Also included **prototype.js** in source for AJAX support
- Go to the ffead-server/Release or ffead-server/Debug depending on whether you need to debug the server code
- Open terminal and type "make all" and "make build-apps" to build the server and the default applications provided ("make all" will build ffead with all modules enabled)
- **From version 1.8 onwards you can also select modules to build within ffead using the make modules={comma separated module list} all command, for a complete list of modules names please refer Modules, for e.g, to only build modules webservice,binserialize and distocache use the command "make modules=webservice,binserialize,distocache all"**
- This will create the distribution folder named ffead-server inside ffead-server/Release or ffead-server/Debug folders accordingly
- Type ./server.sh when inside the ffead-server/Release/ffead-server folder to start the application server
- Go to the ffead-server/Release/ffead-server/tests folder and run ./runTests.sh, this will do an initial sanity of the capabilities of the framework and also validate the same
- A default application is already provided for your reference inside the ffead-server/web folder, this application is served at urlpath /
- 2 other applications are provided, urlpath /flexApp and /oauthApp
- To compile the default application shared library go to the ffead-server/Release/ffead-server/web/default/src/Debug folder and run "make all"
- Copy the libdefault library to the ffead-server/Release/ffead-server/lib folder
- Place your application shared library inside the ffead-server/Release/ffead-server/lib or ffead-server/Debug/ffead-server/lib folder.
- Place your web application specific files inside the ffead-server/Release/ffead-server/web folder inside a folder with your application name

FreeBSDInstallationDirections

Installing ffead-server-freebsd on FreeBSD

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FreeBSD based Installation

- Follow **Windows/Cygwin Install** for directions on how to install on Windows and Cygwin
- Download the tar file and extract it to the location of your choice.
- Install **Unix-ODBC** and required odbc files for **MySQL** dependency
- Install **Open-SSL** as well
- Also included **prototype.js** in source for AJAX support
- Go to the ffead-server-freebsd/Release or ffead-server-freebsd/Debug depending on whether you need to debug the server code
- Open terminal and type "gmake all" and "gmake build-apps" to build the server and the default applications provided ("gmake all" will build ffead with all modules enabled)
- **From version 1.8 onwards you can also select modules to build within ffead using the gmake modules={comma separated module list} all command, for a complete list of modules names please refer Modules, for e.g, to only build modules webservice,binserialize and distocache use the command "gmake modules=webservice,binserialize,distocache all"**
- This will create the distribution folder named ffead-server inside ffead-server/Release or ffead-server/Debug folders accordingly
- Type ./server.sh when inside the ffead-server/Release/ffead-server folder to start the application server
- Go to the ffead-server/Release/ffead-server/tests folder and run ./runTests.sh, this will do an initial sanity of the capabilities of the framework and also validate the same
- A default application is already provided for your reference inside the ffead-server/web folder, this application is served at urlpath /
- 2 other applications are provided, urlpath /flexApp and /oauthApp
- To compile the default application shared library go to the ffead-server/Release/ffead-server/web/default/src/Debug folder and run "gmake all"
- Copy the libdefault library to the ffead-server/Release/ffead-server/lib folder
- Place your application shared library inside the ffead-server/Release/ffead-server/lib or ffead-server/Debug/ffead-server/lib folder.
- Place your web application specific files inside the ffead-server/Release/ffead-server/web folder inside a folder with your application name
- Remember all installation files(makefile,subdir.mk) assume the ports are installed to the /usr/local/lib directory, in case you choose custom settings during installation of dependencies then make sure to change all files to include the -L/usr/local/lib to -L/location/of your/choice

SolarisInstallationDirections
Installing ffead-server-solaris on Solaris

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Solaris based Installation

- Follow **Windows/Cygwin Install** for directions on how to install on Windows and Cygwin
- Download the tar file and extract it to the location of your choice.
- Install the following using the commands mentioned below

System Header files

```
sudo pkg install system/header
```

Install OpenCSW and edit PATH variable for CSW

```
sudo pkgadd -d http://get.opencsw.org/now vi ~/.profile
```

- change the PATH to add /opt/csw/bin before the /usr/bin part - PATH should now look like /opt/csw/bin:/usr/bin:/usr/share/bin

Install GCC/UnixODBC and SSL devel and libraries

```
sudo pkgutil -y -i gcc4core gcc4g++ libstdc++6 unixodbc unixodbc_dev libssl1_0_0 libssl_dev subversion(optional)
```

- Also included prototype.js in source for AJAX support
- Go to the ffead-server-solaris/Release or ffead-server-solaris/Debug depending on whether you need to debug the server code
- Open terminal and type "gmake all" and "gmake build-apps" to build the server and the default applications provided ("gmake all" will build ffead with all modules enabled)
- **From version 1.8 onwards you can also select modules to build within ffead using the gmake modules={comma separated module list} all command, for a complete list of modules names please refer Modules, for e.g, to only build modules webservice,binserialize and distocache use the command "gmake modules=webservice,binserialize,distocache all"**
- This will create the distribution folder named ffead-server inside ffead-server/Release or ffead-server/Debug folders accordingly
- Type ./server.sh when inside the ffead-server/Release/ffead-server folder to start the application server
- Go to the ffead-server/Release/ffead-server/tests folder and run ./runTests.sh, this will do an initial sanity of the capabilities of the framework and also validate the same
- A default application is already provided for your reference inside the ffead-server/web folder, this application is served at urlpath /
- 2 other applications are provided, urlpath /flexApp and /oauthApp
- To compile only the default application shared library go to the ffead-server/Release/ffead-server/web/default/src/Debug folder and run "gmake all"
- Copy the libdefault library to the ffead-server/Release/ffead-server/lib folder
- Place your application shared library inside the ffead-server/Release/ffead-server/lib or ffead-server/Debug/ffead-server/lib folder.
- Place your web application specific files inside the ffead-server/Release/ffead-server/web folder inside a folder with your application name

WindowsCygwinInstallationDirections

Installing ffead-server on Windows and Cygwin

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Installation On Windows with Cygwin

- Download Cygwin setup.exe and follow instruction to install Cygwin, proceed with default settings.
- After Cygwin is successfully installed, you can open a cygwin terminal to check whether Cygwin works.
- Run the setup.exe to install further dependencies whenever required.
- Following are the dependencies,
  1. gcc
  2. g++
  3. autoconf
  4. automake
  5. openssl libraries and devel (use Cygwin_SSL_UnixOdbc_libs.zip from downloads section for version 1.0)
  6. unixODBC libraries and devel (not found in Cygwin reposistory, use Cygwin_SSL_UnixOdbc_libs.zip from download section)
  7. bison,yacc,flex,gdb,readline,binutils (for building and installing openssl and unixODBC)
- Copy bin/gcc-3 or bin/gcc-4 and rename it ot gcc (the already existing link file gcc sometimes gives permission errors)
- You can build and install openssl and unixodbc and copy the required library files to the cygwin lib folder. The already built libraries are present in the Cygwin_SSL_UnixOdbc_libs.zip file which can be copied to the lib folder directly.
- Download the latest release tar file and extract it to the location of your choice under Cygwin installation.
- Install **Unix-ODBC** and required odbc files for **MySQL** dependency
- Install **Open-SSL** as well
- Also included **prototype.js** in source for AJAX support
- Go to the ffead-server/Release or ffead-server/Debug depending on whether you need to debug the server code
- Open terminal and type "make all" and "make build-apps" to build the server and the default applications provided ("make all" will build ffead with all modules enabled)
- **From version 1.8 onwards you can also select modules to build within ffead using the make modules={comma separated module list} all command, for a complete list of modules names please refer Modules, for e.g, to only build modules webservice,binserialize and distocache use the command "make modules=webservice,binserialize,distocache all"**
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- Copy the libdefault library to the ffead-server/Release/ffead-server/lib folder
- Place your application shared library inside the ffead-server/Release/ffead-server/lib or ffead-server/Debug/ffead-server/lib folder.
- Place your web application specific files inside the ffead-server/Release/ffead-server/web folder inside a folder with your application name

ffead-cpp

c++ framework, c++ web framework, c++ application framework, c++ security framework, c++ rest framework, c++ soap framework, Framework for Enterprise Application Development, c++ web sites,c++ web applications, c++ driven web development - c++

Modules
Module Names

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Modules

- webservice - enables web service support
- cibernate - enables cibernate orm support
- jobs - enables Jobs support
- distocache - enables in-built distributed cache (distocache) support
- xmlserialize - enables XML serialization support
- binserialize - enables Binary serialization support
- dcp - enables Dynamic C++ Pages support
- dview - enables Dynamic Views support
- tpe - enables Template based view support
- appflow - enables Application Flow support
- interpreter - enables Interpreter support
- methinvoker - enables Method Invoker support
- msghandler - enables Message Handler support
- component - enables Component(Enterprise Beans) support
- scripthandler - enables scripting languages support (For more information please refer ScriptingLanguageSupport

QuickStartGuide

Create a new application in minutes

Featured, Phase-Implementation

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Quick Start Guide

BINARY FILE

- Download the ffead-server-{os}-bin-v{version}.zip file and extract it to the location of your choice.
- Visit the Installation Directions page for more information
- Go to the folder ffead-server.
- Modify ffead-server/resources/server.prop to set the port, default application, number of server processes and other essential attributes Server-Properties
- Modify ffead-server/resources/log.properties file to enable custom logging for the applications Logger-Properties
- chmod 777 ffead-server/server.sh
- Execute ./server.sh start the Web Server
- Go to the ffead-server/tests folder and run ./runTests.sh, this will do an initial sanity of the capabilities of the framework and also validate the same
- Enter http://localhost:port/index.html and Watch the magic!!!
- A sample test page is provided at http://localhost:port/indexmain.html

SOURCE FILE

- Download the ffead-server-v{version}.zip file and extract it to the location of your choice.
- Visit the Installation Directions page for more information
- Go the folder ffead-server/Debug or ffead-server/Release folder.
- chmod 777 makeAll.sh
- Execute the ./makeAll.sh file, it will compile and build the complete project and all required web applications
- Go to the ffead-server/Debug/ffead-server or ffead-server/Release/ffead-server folder
- Modify ffead-server/resources/server.prop to set the port, default application, number of server processes and other essential attributes Server-Properties
- Modify ffead-server/resources/logging.xml file to enable custom logging for the applications Logger-Properties
- chmod 777 ffead-server/server.sh
- Execute ./server.sh start the Web Server
- Go to the ffead-server/tests folder and run ./runTests.sh, this will do an initial sanity of the capabilities of the framework and also validate the same
- Enter http://localhost:port/index.html and Watch the magic!!!
- A sample test page is provided at http://localhost:port/indexmain.html

ServerProperties

The properties for the Application Server.

ffead, cpp, server, property, configuration

Updated Today (82 minutes ago) by sumeet.chhetri@gmail.com

Server Properties

```
# The default Application name
DEF_PATH=default

#The Server listening port number
PORT_NO=8080

#The Component Invoker listening port number, feature disabled if not specified
CMP_PORT=

#The Messaging Daemon listening port number, feature disabled if not specified
MESS_PORT=

#The Method Invoker listening port number, feature disabled if not specified
MI_PORT=

#Enable SSL?
SSL_ENAB=false

#The mime types supported
SUPP_MIMES=*

#Is Authorization required
AUTH_ENAB=false

#Number of Server processes
NUM_PROC=4

#The type of Threading strategy
THRD_PREQ=true

#The Thread Pool size for Pooled implementations
THRD_PSIZ=30

#Where to store the session state Browser cookies/Server side file
SESS_STATE=server

#When to timeout the session
SESS_TIME_OUT=3600

#Compilers are generally disabled on production deployments
#Start server with DEV_MODE=true on Development servers
#and move the code to Production changing the flag DEV_MODE=false
#The code would not be generated at run-time on server restart now
DEV_MODE=true

#If you want to bind the server to a particular IP
IP_ADDR=

#If this property is set to TRUE/true the invocation of php, perl, python, ruby, lua and nodejs scripts
#will generate Warning/Error messages if any caused by the script while generating the HTML by the script
SCRIPT_ERRS=false

#Number of seconds the connection should be kept-alive, keep it low for better overall performance
KEEP_ALIVE_SECONDS=2

TRANSFER_ENCODING_CHUNK_SIZE=8192

#gzip or deflate
CONTENT_ENCODING=gzip

#Maximum number of request headers allowed
MAX_REQUEST_HEADERS_COUNT=100

#Maximum Request Entity size, 2GB
MAX_REQUEST_ENTITY_SIZE=2147483647

#Session File lock default time in seconds
SESS_LCK_TIME=5

#The distocache client pool size
DISTOCACHE_POOL_SIZE=20

#The distocache listening port number
```

```
DISTOCACHE_PORT_NO=
```

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RESTTestingFramework

Acceptance Testing Framework for RESTFULL services

Updated Feb 7, 2013 by sumeet.chhetri@gmail.com

ACCEPTANCE TEST FRAMEWORK

- Since version 1.7 an acceptance testing framework has been provided that can be used to validate the ffead-server installation or can be used to create acceptance tests for any rest full applications.
- The tests folder inside the /ffead-server/ folder houses the code and related files.
- test.csv has all the test cases that need to be executed providing endpoint details and validation details like expected content-length, request parameters etc
- testValues.prop provides all the configuration parameters like server ip, port, ssl enabled etc. Moreover it also has the request content body for the requests present in the test.csv file

test.csv

```
ENABLED = is this test enabled
SHOW_CONTENT = display content on console
REQUEST = the HTTP method followed by the request URL
RESP_STATUS = the response status code
MATCH_FILE = validate the response content length against this file's size
RESP_CONT_LEN = if no matching file is provided then the content length to validate against the response content length
REQ_CONT_TYPE = the request content type
REQ_CONTENT = the request body or a property key that has a value inside testValues.prop file
HEADERS = the header parameters to set in format like header_p1=value1;header_p2=value2
RESP_CONT_TYPE = the response content to validate against


ENABLED,SHOW_CONTENT,REQUEST,RESP_STATUS,MATCH_FILE,RESP_CONT_LEN,REQ_CONT_TYPE,REQ_CONTENT,HEADERS,RESP_CONT_TYPE
Y,N,GET /,200,../web/default/index.html,
Y,N,GET /index.yourext,200,../web/default/index.html,
Y,N,GET /flexApp/,200,../web/flexApp/index.html,
Y,N,GET /oauthApp/,200,../web/oauthApp/index.html,
Y,N,GET /indexmain.html,200,../web/default/indexmain.html,
Y,N,GET /test.tpe,200,,110
Y,N,GET /test.view,200,,138
Y,N,GET /test.dcp,200,,194
Y,N,GET /Testing.wsdl,200,,5880
Y,N,GET /bg.jpg,200,../web/default/bg.jpg,
Y,N,GET /login.html,200,../web/default/login.html,
Y,N,POST /login.html,307,,,application/x-www-form-urlencoded,_ffead_security_cntxt_username=sumeet&_ffead_security_cntxt_password=sumeet
Y,Y,GET /test.form?txtField=asd&numField=123&selField=1,200,,4
Y,Y,GET /rest/path/rest1/add/1/2,200,,9
Y,Y,GET /rest/reqparam/rest1/add?1=1&2=2,200,,9
Y,Y,GET /rest/header/rest1/add,200,,9,,,1=1;2=2
Y,Y,POST /rest/postparam/rest1/add,200,,9,application/x-www-form-urlencoded,1=1&2=2
Y,Y,GET /rest/controller/base1/power/exp2,200,,9
Y,Y,POST /restvec/tstvec,200,,17,,TSTVALUES_POSTRSTVEC_VALUES
Y,Y,POST /restobj/tstobj,200,,323,application/json,TSTVALUES_POSTJSONOBJ_VALUES
Y,Y,POST /restvecobj/tstvecobj,200,,272,application/json,TSTVALUES_POSTJSONVECOBJ_VALUES,,application/json
Y,Y,POST /restobj/tstobj.xml,200,,164,application/xml,TSTVALUES_POSTXMLOBJ_VALUES,,application/json
Y,Y,POST /restvecobj/tstvecobj.xml,200,,166,application/xml,TSTVALUES_POSTXMLVECOBJ_VALUES,,application/json
Y,N,POST /restvecobj/tstvecobj,415,,,application/xml,TSTVALUES_POSTJSONVECOBJ_VALUES,,
Y,N,GET /restvecobj/tstvecobj,405,,,,
Y,Y,POST /default,200,,,application/x-www-form-urlencoded,TSTVALUES_POSTAFCTST_VALUES
Y,Y,POST /Testing,200,,,application/soap+xml,TSTVALUES_POSTSOAP_VALUES
Y,Y,GET /flexApp/getJSON.json,200,,,,
```

testValues.prop

```
SERVER_IP_ADDRESS=
SERVER_PORT=
SERVER_SSL_ENABLED=false
TSTVALUES_POSTRSTVEC_VALUES=[1,2,3,4,5]
TSTVALUES_POSTJSONOBJ_VALUES={    "t": {       "id": "1",       "name": "test"    },    "y": "2",    "vi": [1,2,3,4,5],    "vs": ["a","b","c",""],    "vd":
TSTVALUES_POSTJSONVECOBJ_VALUES=[{    "t": {       "id": "1",       "name": "test"    },    "y": "2",    "vi": [1,2,3,4,5],    "vs": ["a","b","c",""],    "
TSTVALUES_POSTXMLOBJ_VALUES=<TestMany>   <t type="Test">      <Test>      <id type="int">2</id>      <name type="string">asdsa</name>
TSTVALUES_POSTXMLVECOBJ_VALUES=<vector-TestMany>   <TestMany>    <t type="Test">      <Test>       <id type="int">2</id>       <name ty
TSTVALUES_POSTAFCTST_VALUES=claz=Expose&method=sayHello2&paramsize=3&param_1={"i":1,"j":"adsasd","c":2.3}&param_2=2&param_3=3
TSTVALUES_POSTSOAP_VALUES=<?xml version="1.0"?><soap:Envelope xmlns:soap="http://www.w3.org/2001/12/soap-envelope" soap:encodingStyle="
```

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LoggerProperties

Properties for Application level Logging

ffead, cpp, logger, configuration

Updated Today (80 minutes ago) by sumeet.chhetri@gmail.com

Logger Properties

```
<loggers>
	<!--The default logger-->
	<logger name="DEFAULT" mode="CONSOLE" level="INFO"/>
	<!--The custom logger with name JOB, writes to file jobs.log-->
	<logger name="JOB" mode="FILE" level="INFO">
		<file>jobs.log</file>
	</logger>
</loggers>
```

NewWebApp

Create a new application in minutes

Updated Feb 3, 2013 by sumeet.chhetri@gmail.com

Add new web application

- Download the tar file and extract it to the location of your choice.
- Visit the Installation Directions page for more information
- Go the folder ffead-server-unix/Debug/ffead-server.
- Create a new folder in ffead-server/web i.e, appname
- Modify ffead-server/resources/ffead-server.prop to set the port, default application, number of server processes and other essential attributes Server-Properties
- Create ffead-server/resources/log.properties file to enable custom logging for the applications Logger-Properties
- Create new folders /lib /components /config /dcp /include under your newly created application folder (appname)
  - ffead-server/web/appname
    1. /lib
    2. /include
    3. /dcp
    4. /config
    5. /components
- Drop all your application level header files intended for Serialization and Reflection enabled support in the /appname/include folder. All files targeted for Web-Services, Ajax, Database mapping, Components, Controllers, Templates, Views etc should have their header definition files present in the /appname/include folder.
- Drop the shared library of your application inside the /appname/lib folder.
- Create/Drop your html/tpe files directly in the /appname folder Example-tpe-File
- Create/Drop your dcp files in the /appname/dcp folder Example-dcp-File
- Create /appname/config/cibernate.xml for ORM support Cibernate-Configuration
- Create /appname/config/application.xml for REST full services,Dynamic C++ pages,Templates and Dynamic view support Application-Level-Configuration
- Create /appname/config/afc.properties for Ajax Support Ajax-Configuration
- Create /appname/config/ws.xml for Web-Service Support Web-Services-Configuration
- For Business Entities or Business Driven Beans create your custom *.cmp files and drop them inside the /appname/components folder Example-Component
- For Dependency Injection create a file named /appname/config/depInj.xml Example depInj.xml
- Create /appname/config/messaging.xml for Messaging support Messaging-Configuration
- Create a new HTML page named index.html and place it in your /appname folder
- Restart the Web Server
- Enter http://localhost:port/appname/ and Watch the magic!!!

ApplicationLevelConfig

Configure Applications

ffead, cpp, application, configuration, controller, template, dynamic, view, dview, filter

Updated Today (57 minutes ago) by sumeet.chhetri@gmail.com

Application Level Configuration

```
<app>
	<cors-config>
		<allow-origins>*</allow-origins>
		<allow-methods>GET, POST, HEAD, PUT, DELETE</allow-methods>
		<allow-headers>content-type, origin</allow-headers>
		<expose-headers>content-type, origin</expose-headers>
		<allow-credentials>true</allow-credentials>
		<max-age>1023</max-age>
	</cors-config>
	<cache-control>
		<control ext="png,css,js,jpeg,jpg,gif" header="Cache-Control" value="max-age=290304000, public"/>
		<control ext="txt,xml,json" header="Cache-Control" value="max-age=172800, public, must-revalidate"/>
		<control ext="html,html" header="Cache-Control" value="max-age=7200, must-revalidate"/>
		<control file="video.mov" header="Expires" value="Thu, 15 Apr 2020 20:00:00 GMT"/>
		<control header="Last-Modified" remove="true"/>
	</cache-control>
	<controllers>
		<controller class="DefaultController" url="*.action"/>
		<controller class="DefaultController" url="*.do"/>
		<controller from="*.yourext" to="*.html"/>
	</controllers>
	<authhandlers>
		<authhandler provider="file:users" url="*.authenticate"/>
		<authhandler provider="class:DefaultOAUTHController" url="*.oauth"/>
	</authhandlers>
	<templates>
		<template class="DefTemp" file="test.tpe"/>
	</templates>
	<dviews>
		<dview class="Dview" path="test.view"/>
	</dviews>
	<ajax-interfaces>
		<ajax-interface url="/expose" class="Expose"/>
	</ajax-interfaces>
	<filters>
		<filter class="DefaultIOFilter" type="in"/>
		<filter class="DefaultIOFilter" type="out"/>
		<filter class="DefaultIOFilter" type="handle" url="*.filter"/>
	</filters>
	<security>
		<login-handler provider="file:users" url="login.html"/>
		<welcome file="index.html"/>
		<!--login-handler provider="class:DefaultLoginHandler"/-->
		<!--login-handler provider="db:DefaultLoginHandler"/-->
		<secure path="*" role="ROLE_ANONYMOUS"/>
		<secure path="/rest/*" role="ROLE_USER"/>
	</security>
	<restcontrollers>
		<restcontroller class="DefaultRestController" urlpath="/rest/path/" name="rest1">
			<restfunction name="addNumbers" alias="add/{1}/{2}" meth="GET">
				<param type="int" name="1" from="path"/>
				<param type="int" name="2" from="path"/>
			</restfunction>
		</restcontroller>
		<restcontroller class="DefaultRestController" urlpath="/rest/reqparam/" name="rest1">
			<restfunction name="addNumbers" alias="add" meth="GET">
				<param type="int" name="1" from="reqparam"/>
				<param type="int" name="2" from="reqparam"/>
			</restfunction>
		</restcontroller>
		<restcontroller class="DefaultRestController" urlpath="/rest/postparam/" name="rest1">
			<restfunction name="addNumbers" alias="add" meth="POST">
				<param type="int" name="1" from="postparam"/>
				<param type="int" name="2" from="postparam"/>
			</restfunction>
		</restcontroller>
		<restcontroller class="DefaultRestController" urlpath="/rest/header/" name="rest1">
			<restfunction name="addNumbers" alias="add" meth="GET">
				<param type="int" name="1" from="header"/>
				<param type="int" name="2" from="header"/>
			</restfunction>
		</restcontroller>
		<restcontroller class="DefaultRestController" urlpath="/rest/path1/" name="rest2">
```

```
                <restfunction name="addNumbers" alias="+/{1}/{2}" meth="GET">
                    <param type="int" name="1" from="path"/>
                    <param type="int" name="2" from="path"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="rest3">
                <restfunction name="addNumbers" alias="ad/{1}/{2}" meth="GET">
                    <param type="int" name="1" from="path"/>
                    <param type="int" name="2" from="path"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController">
                <restfunction name="power" meth="GET" baseUrl="/rest/controller/base{1}/power/exp{2}">
                    <param type="int" name="1" from="path"/>
                    <param type="int" name="2" from="path"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController">
                <restfunction name="addNumbers" meth="GET" alias="addNumbers/{1}/{2}">
                    <param type="int" name="1" from="path"/>
                    <param type="int" name="2" from="path"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="restvec">
                <restfunction name="testVector" alias="tstvec" meth="POST">
                    <param type="vector-of-int" from="body"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="restvecobj">
                <restfunction name="testVectorObject" alias="tstvecobj" meth="POST" icontentType="application/json">
                    <param type="vector-of-TestMany" from="body"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="restobj">
                <restfunction name="testObject" alias="tstobj" meth="POST" icontentType="application/json" ocontentType="application/json">
                    <param type="TestMany" from="body"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="restvecobj">
                <restfunction name="testVectorObject" alias="tstvecobj.xml" meth="POST" icontentType="application/xml">
                    <param type="vector-of-TestMany" from="body"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="restobj">
                <restfunction name="testObject" alias="tstobj.xml" meth="POST" icontentType="application/xml">
                    <param type="TestMany" from="body"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="restupload">
                <restfunction name="testUploadFile" alias="uploadFile" meth="POST" icontentType="multipart/form-data">
                    <param type="filestream" name="file" from="multipart-content"/>
                    <param type="string" name="field" from="multipart-content"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="restupload">
                <restfunction name="testUploadFileMulti1" alias="uploadFileMulti1" meth="POST" icontentType="multipart/form-data">
                    <param type="filestream" name="file1" from="multipart-content"/>
                    <param type="filestream" name="file2" from="multipart-content"/>
                    <param type="filestream" name="file3" from="multipart-content"/>
                    <param type="string" name="field" from="multipart-content"/>
                </restfunction>
            </restcontroller>
            <restcontroller class="DefaultRestController" name="restupload">
                <restfunction name="testUploadFileMulti2" alias="uploadFileMulti2" meth="POST" icontentType="multipart/form-data">
                    <param type="vector-of-filestream" name="files" from="multipart-content"/>
                    <param type="string" name="field" from="multipart-content"/>
                </restfunction>
            </restcontroller>
        </restcontrollers>
        <job-procs>
            <job-proc cron="* * * * *" name="testCronJob" class="TestCronBasedJob" method="runJob"/>
        </job-procs>
</app>
```

CORSConfiguration

Configuration for CORS

Updated Today (75 minutes ago) by sumeet.chhetri@gmail.com

Cross Origin Resource Sharing (CORS)

```
<app>
	<cors-config>
		<allow-origins>*</allow-origins>
		<allow-methods>GET, POST, HEAD, PUT, DELETE</allow-methods>
		<allow-headers>content-type, origin</allow-headers>
		<expose-headers>content-type, origin</expose-headers>
		<allow-credentials>true</allow-credentials>
		<max-age>1023</max-age>
	</cors-config>
	...
</app>
```

JobsExample

An Example Job Implementation

Updated Today (61 minutes ago) by sumeet.chhetri@gmail.com

TestCronBasedJob.h

```
#ifndef TESTCRONBASEDJOB_H_
#define TESTCRONBASEDJOB_H_
#include "string"
#include <iostream>
#include "CastUtil.h"
using namespace std;

class TestCronBasedJob {
	int counter;
public:
	TestCronBasedJob();
	virtual ~TestCronBasedJob();
	void runJob();
};

#endif /* TESTCRONBASEDJOB_H_ */
```

TestCronBasedJob.cpp

```
#include "TestCronBasedJob.h"

TestCronBasedJob::TestCronBasedJob() {
	counter = 0;
}

TestCronBasedJob::~TestCronBasedJob() {
	// TODO Auto-generated destructor stub
}

void TestCronBasedJob::runJob() {
	cout << "Job process run number - " + CastUtil::lexical_cast<string>(++counter) << endl;
}
```

Config for jobs in application.xml

```
<job-procs>
		<job-proc cron="* * * * *" name="testCronJob" class="TestCronBasedJob" method="runJob"/>
</job-procs>
```

SecurityConfig

Configuration for Security

cpp, web, security, rolebased

Updated Jul 30, 2012 by sumeet.chhetri@gmail.com

Security Configuration

```
<!--The list of security parameters in the application-->
<app>
   <security>
            <!--Provides a handler for authenticating and authorizing access to users-->
            <login-handler provider="file:users" url="login.html"/>
            <!--login-handler provider="class:DefaultLoginHandler"/-->
            <!--login-handler provider="db:DefaultLoginHandler"/-->
            <!--A welcome page shown right after successful authentication/authorization-->
            <welcome file="index.html"/>
            <!--All pages in the application can be accessed anonymously-->
            <secure path="*" role="ROLE_ANONYMOUS"/>
            <!--The /rest/* path of the application can only be accessed by valid users of the application-->
            <secure path="/rest/*" role="ROLE_USER"/>
      </security>
</app>
```

FilterConfig

Configuration file for Filters

cpp, web, filter, configuration, request, response, ffead

Updated Jul 30, 2012 by sumeet.chhetri@gmail.com

Filter Configuration

```
<!--The list of filters configured in the application-->
<app>
   <filters>
      <!--A filter configured for request level filtering and the first filter in the request chain
will server all request patterns-->
      <filter type="request" class="ExampleRequestFilter"/>
      <!--A filter configured for response level filtering and the first filter in the response chain
will server only *.htm-->
      <filter type="response" class="ExampleResponseFilter" url="*.htm"/>
   </filters>
</app>
```

ExampleFilter

Implementation files for Content Filters

ffead, cpp, filter, request, response, pre, post, processing, content, example

Updated Apr 7, 2011 by sumeet.chhetri@gmail.com

ExampleRequestFilter.cpp

```
#include "Filter.h"

class ExampleRequestFilter : public Filter
{
   void doInputFilter(HttpRequest *request)
   {
      //Pre/Post Processing of request
      request.set....
   }
};
```

ExampleResponseFilter.cpp

```
#include "Filter.h"

class ExampleResponseFilter : public Filter
{
   void doOutputFilter(HttpResponse *response)
   {
      //Pre/Post Processing of response
      response.set....
   }
};
```

application.xml

```
<app>
      <filters>
            <filter class="ExampleRequestFilter" type="in"/>
            <filter class="ExampleResponseFilter" type="out"/>
      </filters>
</app>
```

CibernateConfig

Configuration for Cibernate (ORM)

ffead, cpp, cibernate, orm, configuration, hasmany, hasone, relation, object, table

Updated Today (22 minutes ago) by sumeet.chhetri@gmail.com

Cibernate ORM Configuration

```
<cibernate>
	<config>
		<!--The DB user name-->
		<uid>DB user Name</uid>
		<!--The DB user password-->
		<pwd>DB user password</pwd>
		<!--The DB Data Source name-->
		<dsn>Data Source Name</dsn>
		<!--The DB connection pool size-->
		<pool-size>5</pool-size>
		<!--The database dialect-->
		<dialect>MySQLDialect</dialect>
	</config>
	<tables>
		<!--The Table to Objcet Mapping-->
		<table name="test4" class="Test4">
			<col dbf="dat" obf="date"></col>
			<col dbf="datt" obf="datt"></col>
			<col dbf="datm" obf="dattm"></col>
		</table>
		<table name="person" class="Person">
			<hasMany fk="person_id" pk="id" field="interests" relClass="Person_Interests" relfk="interest_id" relpk="id">Interest</hasMany>
			<col dbf="id" obf="id"></col>
			<col dbf="name" obf="name"></col>
			<col dbf="age" obf="age"></col>
			<hasOne fk="life_id" pk="id" field="life" lazy="true">Life</hasOne>
		</table>
		<table name="interest" class="Interest">
			<hasMany fk="interest_id" pk="id" field="persons" relClass="Person_Interests" relfk="person_id" relpk="id">Person</hasMany>
			<col dbf="id" obf="id"></col>
			<col dbf="desc" obf="desc"></col>
			<col dbf="type" obf="type"></col>
		</table>
		<table name="person_interests" class="Person_Interests">
			<col dbf="person_id" obf="person_id"></col>
			<col dbf="interest_id" obf="interest_id"></col>
		</table>
		<table name="life clas="Life">
			<col dbf="life_id" obf="life_id"></col>
			<col dbf="desc" obf="desc"></col>
			<col dbf="type" obf="type"></col>
		</table>
	</tables>
</cibernate>
```

ExampleDBTablesAndObjects

An Example Implementation of DB Tables and Objects

ffead, cpp, db, tables, object, mappings, cibernate, orm

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

Person.h

```
#ifndef PERSON_H_
#define PERSON_H_
#include "string"
using namespace std;

class Person {
	int id;
	int age;
	string name;
public:
	Person();
	virtual ~Person();
	int getId() const;
	void setAge(int);
	int getAge() const;
	void setId(int);
	string getName() const;
	void setName(string);
	bool operator<(Person t) const;
};

#endif /* PERSON_H_ */

create table person (id int,int age,name varchar(255));
```

Life.h

```
#ifndef LIFE_H_
#define LIFE_H_
#include "string"
using namespace std;

class Life {
	int id;
	strin type,desc;
public:
	Life();
	virtual ~Life();
	int getId() const;
	void setId(int id);
	string getType() const;
	void setType(string);
	string getDesc() const;
	void setDesc(string);
};

#endif /* LIFE_H_ */

create table life (id int,desc varchar(255),type varchar(50));
```

Interest.h

```
#ifndef INTEREST_H_
#define INTEREST_H_
#include "string"
using namespace std;

class Interest {
	int id;
	strin type,desc;
public:
	Interest();
	virtual ~Interest();
	int getId() const;
	void setId(int id);
	string getType() const;
	void setType(string);
	string getDesc() const;
	void setDesc(string);
```

```
};

#endif /* INTEREST_H_ */

create table interest (id int,desc varchar(255),type varchar(50));
```

PersonInterest.h

```
#ifndef PERSONINTEREST_H_
#define PERSONINTEREST_H_
#include "string"
using namespace std;

class PersonInterest {
	int person_id;
	int interest_id;
public:
	PersonInterest();
	virtual ~PersonInterest();
	int getPersonId() const;
	void setPersonId(int personId);
	int getInterestId() const;
	void setInterestId(int interestId);
};

#endif /* PERSONINTEREST_H_ */

create table person_interest(person_id int,interest_id int);
```

Test.h

```
#ifndef TEST_H_
#define TEST_H_
#include "string"
using namespace std;

class Test{
	int id;
	int age;
	string name;
public:
	Test();
	virtual ~Test();
	int getId() const;
	void setId(int);
	string getName() const;
	void setName(string);
	bool operator<(Test t) const;
};

#endif /* TEST_H_ */

create table test (id int,name varchar(255));



= {{{Test4.h}}} =
{{{
#ifndef TEST4_H_
#define TEST4_H_
#include "Date.h"
#include "BinaryData.h"

class Test4 {
	Date date;
	Date datt;
	Date dattm;
	BinaryData binar;
public:
	Test4();
	virtual ~Test4();
	Date getDate() const;
	void setDate(Date date);
	Date getDatt() const;
	void setDatt(Date datt);
	Date getDattm() const;
	void setDattm(Date dattm);
	BinaryData getBinar() const;
	void setBinar(BinaryData binar);
};
#endif /* TEST4_H_ */

create table test4 (date date,datt datetime,dattm timestamp,binar blob);
}}}
```

TestCibernate

Example ORM Usage

ffead, cpp, cibernate, orm, example, object, relational, mapping

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

```
#include "Cibernate.h"
#include "Test.h"
#include "Timer.h"
#include "Object.h"

int main()
{
	Cibernate chib("MySQL-test","sumeet","sumeet");
	int i=2,j=4,k;
	Object oi;
	oi << i;
	Object oj;
	oj << j;
	Object ok;
	ok << k;
	chib.addParam("i","in",oi);
	chib.addParam("j","inout",oj);
	chib.addParam("k","out",ok);
	Timer tim;
	tim.start();
	chib.procedureCall("func1");
	vector<Test> tec = chib.getARAC<Test>();
	int id1=1;
	string name1 = "sumeet";
	oi << id1;
	oj << name1;
	chib.addParam("id",oi);
	chib.addParam("name",oj);
	tec = chib.getARACW<Test>();
	Test tec1 = chib.getOR<Test>(1);
	tec1 = chib.getOR<Test>(2);
	tec1 = chib.getOR<Test>(3);
	vector<int> tec2 = chib.getAROC<int>("id");
	vector<string> tec3 = chib.getAROC<string>("name");
	id1 = 4;
	name1 = "amit1233";
	oi << id1;
	oj << name1;
	chib.addParam1("id",oi);
	chib.addParam1("name",oj);
	int wid1 = 4;
	oi << wid1;

	Test tr;
	tr.setId(5);
	tr.setName("sumit");
	vector<string> cols;
	cols.push_back("id");cols.push_back("name");
	chib.insertORSC<Test>(tr,cols);
	tr.setId(6);
	chib.insertORAC<Test>(tr);
	tec.clear();
	Test *tp = new Test;
	tp->setId(7);
	tec.push_back(*tp);
	tp = new Test;
	tp->setId(8);
	tec.push_back(*tp);
	chib.bulkInsertRAC<Test>(tec);
	cols.erase(cols.begin()+1);
	string ns = "";
	Object on;
	on << ns;
	chib.addParam("name",on);
	//chib.getARSCW<Test>(cols);
	//chib.getARSC<Test>(cols);
	tp->setName("kriss");
	id1 = 8;
	oi << id1;
	chib.addParam("id",oi);
	//chib.updateRsAC<Test>(*tp);
	tim.end();
	cout << "\ndone" << flush;
	return 1;
}
```

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AjaxConfig

Configuration for Ajax support

ajax, configuration, cpp, ffead

Updated Today (29 minutes ago) by sumeet.chhetri@gmail.com

Ajax Configuration inside application.xml

```
<ajax-interfaces>
    <ajax-interface url="/expose" class="Expose"/>
</ajax-interfaces>
```

ExampleAJAXService

An Example AJAX Service Implementation

ffead, cpp, ajax, service, example, implementation, object, to, javascript, mapping

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

ExampleAJAXService.h

```
#ifndef ExampleAJAXService_H_
#define ExampleAJAXService_H_
#include "PropFileReader.h"
#include "YObject.h"

class ExampleAJAXService{
public:
	ExampleAJAXService();
	virtual ~ExampleAJAXService();
	YObject sayHello(string,int,float);
	string sayHello1(string,int,float);
	YObject sayHello2(YObject,int,float);
};

#endif /* ExampleAJAXService_H_ */
```

ExampleAJAXService.cpp

```
ExampleAJAXService::ExampleAJAXService()
{}
ExampleAJAXService::~ExampleAJAXService()
{}
YObject ExampleAJAXService::sayHello(string j,int i,float c)
{
	YObject yobj;
	yobj.i = i;
	yobj.j = j;
	yobj.c = c;
	return yobj;
}
string ExampleAJAXService::sayHello1(string j,int i,float c)
{
	return "Hi There";
}
YObject ExampleAJAXService::sayHello2(YObject arg,int i,float j)
{
	YObject yobj;
	yobj = arg;
	return yobj;
}
```

MessagingConfig

Configuration file for Messaging Support

ffead, cpp, messaging, configuration, topic, queue

Updated Jul 30, 2012 by sumeet.chhetri@gmail.com

Messaging Configuration

```
<messaging>
   <service>
      <destination type="Queue" name="myQ"></destination>
      <url>localhost:8000</url>
   <service>
   <service>
      <destination type="Topic" name="myT"></destination>
      <url>localhost:8001</url>
   <service>
</messaging>
```

WebServicesConfig

Configuration for Web-Services

ffead, cpp, example, implementation, web, service, wsdl

Updated Today (26 minutes ago) by sumeet.chhetri@gmail.com

ws.xml

```
<web-services>
	<web-service location="testing" class="Testing" namespace="ws.testing.service">
		<test1 outname="result"/>
		<test2 outname="result"/>
		<test3 outname="result"/>
		<test4 outname="result"/>
	</web-service>
	<web-service location="testingWS" class="ws::test::TestingWS">
		<wsmeth1 outname="result"/>
		<wsmeth2 outname="result"/>
		<wsmeth3 outname="result"/>
		<wsmeth4 outname="result"/>
		<wsmeth5 outname="result"/>
		<wsmeth6 outname="result"/>
	</web-service>
</web-services>
```

ExampleWebService

An Example Web Service Implementation

ffead, cpp, web, service, wsdl, example, implementation

Updated Today (27 minutes ago) by sumeet.chhetri@gmail.com

Testing.h

```
#ifndef Testing_H_
#define Testing_H_

class Testing {
public:
	Testing();
	virtual ~Testing();
	void test1(string);
	string test2();
	void test3(Test);
	Test test4(string);
};
#endif /* Testing_H_ */
```

Testing.cpp

```
#include "Testing.h"

Testing::Testing() {
	// TODO Auto-generated constructor stub

}

Testing::~Testing() {
	// TODO Auto-generated destructor stub
}

void Testing::test1(string in)
{
	cout << "in Webservice Req for test1 --\n" << in << flush;
}
string Testing::test2()
{
	cout << "in Webservice Req for test2 --\n" <<  flush;
	return "success";
}
void Testing::test3(Test t)
{
	cout << "in Webservice Req for test3 --\n" << t.getName() << flush;
}
Test Testing::test4(string in)
{
	Test g;
	g.setId(1);
	g.setName("Ffead-cpp");
	cout << "in Webservice Req for test4 --\n" << in << flush;
	return g;
}
```

TestingWS.h

```
#ifndef TESTINGWS_H_
#define TESTINGWS_H_
#include "string"
#include "vector"
#include "TestObject.h"
#include "TestObject1.h"
#include "iostream"
#include "CastUtil.h"
using namespace std;

namespace ws {
	namespace test {
		class TestingWS {
		public:
			TestingWS();
			virtual ~TestingWS();
			void wsmeth1(int a, string, long);
			string wsmeth2(string b, vector<int> c);
```

```
                TestObject wsmeth3(string);
                com::obj::TestObject wsmeth4(bool);
                string wsmeth5(TestObject);
                long wsmeth6(com::obj::TestObject);
        };
    }
} /* namespace ws */
#endif /* TESTINGWS_H_ */
```

Testing.cpp

```
#include "TestingWS.h"

namespace ws {
    namespace test {
        TestingWS::TestingWS() {
            // TODO Auto-generated constructor stub

        }

        TestingWS::~TestingWS() {
            // TODO Auto-generated destructor stub
        }

        void TestingWS::wsmeth1(int a, string b, long c) {
            cout << ("WS Method wsmeth1 called with args - " + CastUtil::lexical_cast<string>(a) + " " + b + " " + CastUtil::lexical_cast<string>(c)) <
        }

        string TestingWS::wsmeth2(string b, vector<int> c) {
            string out(b + " ");
            for (int var = 0; var < (int)c.size(); ++var) {
                out.append(CastUtil::lexical_cast<string>(c.at(var)) + " ");
            }
            cout << ("WS Method wsmeth2 called with args - " + out) << endl;
            return out;
        }

        TestObject TestingWS::wsmeth3(string a) {
            TestObject obj;
            obj.setA(3);
            obj.setB(4);
            obj.setC(a);
            obj.setD(5.0);
            obj.setE(6.0);
            obj.setF(true);
            obj.setG(13);
            obj.setH(2);
            obj.setI(-2);
            obj.setJ(-3);
            obj.setK(-4);
            obj.setL(-13);
            cout << ("WS Method wsmeth3 called with args - " + obj.toString()) << endl;
            return obj;
        }

        com::obj::TestObject TestingWS::wsmeth4(bool bol) {
            com::obj::TestObject obj;
            vector<short> a;
            a.push_back(2);
            obj.setA(a);
            vector<int> b;
            b.push_back(3);
            obj.setB(b);
            vector<long> c;
            c.push_back(4);
            obj.setC(c);
            vector<long long> d;
            d.push_back(13);
            obj.setD(d);
            vector<unsigned short> e;
            e.push_back(-2);
            obj.setE(e);
            vector<unsigned int> f;
            f.push_back(-3);
            obj.setF(f);
            vector<unsigned long> g;
            g.push_back(-4);
            obj.setG(g);
            vector<unsigned long long> h;
            h.push_back(-13);
            obj.setH(h);
            vector<float> i;
            i.push_back(5.0);
            obj.setI(i);
            vector<double> j;
            j.push_back(6.0);
            obj.setJ(j);
            vector<bool> k;
            k.push_back(2);
            obj.setK(k);
            vector<string> l;
            l.push_back("string");
            obj.setL(l);
            cout << ("WS Method wsmeth4 called with args - " + obj.toString()) << endl;
            return obj;
```

```
        }

        string TestingWS::wsmeth5(TestObject obj) {
            cout << ("WS Method wsmeth5 called with args - " + obj.toString()) << endl;
            return obj.toString();
        }

        long TestingWS::wsmeth6(com::obj::TestObject obj) {
            cout << ("WS Method wsmeth6 called with args - " + obj.toString()) << endl;
            return 13;
        }
    }
} /* namespace ws */
```

Config for web-service in ws.xml

```
<web-services>
    <web-service location="testing" class="Testing" namespace="ws.testing.service">
        <test1 outname="result"/>
        <test2 outname="result"/>
        <test3 outname="result"/>
        <test4 outname="result"/>
    </web-service>
    <web-service location="testingWS" class="ws::test::TestingWS">
        <wsmeth1 outname="result"/>
        <wsmeth2 outname="result"/>
        <wsmeth3 outname="result"/>
        <wsmeth4 outname="result"/>
        <wsmeth5 outname="result"/>
        <wsmeth6 outname="result"/>
    </web-service>
</web-services>
```

Comment by emily.qi...@gmail.com, Aug 21, 2013

asdf

ScriptingLanguageSupport

Server side Support for Interpreted languages php, perl, python, ruby, lua nd nodejs

Updated Feb 7, 2013 by sumeet.chhetri@gmail.com

PHP PYTHON RUBY PERL LUA NODEJS

- The ffead-server provides server side scripting support for interpreted languages like php, perl, python, ruby, lua nd nodejs.
- The default application folder inside /ffead-server/web/ provides sample script examples that showcase this functionality.
- Example PHP URL - http://localhost:8081/scripts/php/testPHP.php
- Example PERL URL - http://localhost:8081/scripts/perl/testPERL.pl
- Example PYTHON URL - http://localhost:8081/scripts/python/testPYTHON.py
- Example RUBY URL - http://localhost:8081/scripts/ruby/testRUBY.rb
- Example PHP URL - http://localhost:8081/scripts/lua/testLUA.lua
- Example PHP URL - http://localhost:8081/scripts/nodejs/testNODE.njs
- The server is configured in such a way that whenever the URL file has an extension of either of .php, .pl, .py, .rb, .lua or .njs then the server automatically invokes the scripting engine to render the page accordingly.

ExampleController

An Example Controller Implementation

ffead, cpp, example, controller, implementation

Updated Jun 30, 2012 by sumeet.chhetri@gmail.com

ExampleController.h

```
#ifndef EXAMPLECONTROLLER_H_
#define EXAMPLECONTROLLER_H_
#include <iostream>
#include "Controller.h"

class ExampleController: public Controller{
public:
	ExampleController();
	virtual ~ExampleController();
	HttpResponse service(HttpRequest);
};
#endif /* EXAMPLECONTROLLER_H_ */
```

ExampleController.cpp

```
ExampleController::ExampleController()
{}
ExampleController::~ExampleController()
{}
HttpResponse ExampleController::service(HttpRequest request)
{
	/*Play with the request*/
	HttpResponse res;
	/*Modify response*/
	return res;
}
```

Config for controller in application.xml

```
<controllers>
	<!--Custom controller handling url patterns-->
	<controller class="DefaultController" url="*.action"/>
	<controller class="DefaultController" url="*.do"/>

	<!--Internal controller handling extension conversions-->
	<controller from="*.yourext" to="*.html"/>
</controllers>
```

ExampleRestController

An Example Rest Controller Implementation

restcontroller, implementation, Featured, fileupload, multipart

Updated Today (59 minutes ago) by sumeet.chhetri@gmail.com

DefaultRestController.h

```
#ifndef DEFAULTRESTCONTROLLER_H_
#define DEFAULTRESTCONTROLLER_H_

#include "RestController.h"
#include <math.h>
#include <iostream>
#include "vector"
#include "TestMany.h"

class DefaultRestController: public RestController {
public:
	DefaultRestController();
	virtual ~DefaultRestController();
	void addNumbers(int,int);
	void power(int,int);
	void testVector(vector<int>);
	void testObject(TestMany);
	void testVectorObject(vector<TestMany> param);
	void testUploadFile(ifstream* ifs, string param);
	void testUploadFileMulti1(ifstream* ifs1, ifstream* ifs2, ifstream* ifs3, string param);
	void testUploadFileMulti2(vector<ifstream*> vifs, string param);
};

#endif /* DEFAULTRESTCONTROLLER_H_ */
```

DefaultRestController.cpp

```
#include "DefaultRestController.h"

DefaultRestController::DefaultRestController() {
	// TODO Auto-generated constructor stub

}

DefaultRestController::~DefaultRestController() {
	// TODO Auto-generated destructor stub
}

void DefaultRestController::addNumbers(int a, int b)
{
	int c = a + b;
	response->setHTTPResponseStatus(HTTPResponseStatus::Ok);
	response->setContent_type(ContentTypes::CONTENT_TYPE_TEXT_PLAIN);
	response->setContent_str(CastUtil::lexical_cast<string>(a) + " + " + CastUtil::lexical_cast<string>(b) + " = " +
			CastUtil::lexical_cast<string>(c));
	cout << "Processed input request inside DefaultRestController..." << endl;
}

void DefaultRestController::power(int base, int exponent)
{
	int c = pow((double)base, (double)exponent);
	response->setHTTPResponseStatus(HTTPResponseStatus::Ok);
	response->setContent_type(ContentTypes::CONTENT_TYPE_TEXT_PLAIN);
	response->setContent_str(CastUtil::lexical_cast<string>(base) + " ^ " + CastUtil::lexical_cast<string>(exponent) + " = " +
			CastUtil::lexical_cast<string>(c));
	cout << "Processed input request inside DefaultRestController..." << endl;
}

void DefaultRestController::testVector(vector<int> param)
{
	string temvec = "vector[";
	for (int var = 0; var < param.size(); ++var) {
		temvec += CastUtil::lexical_cast<string>(param.at(var));
		if(var!=param.size()-1)
			temvec += ",";
	}
	temvec += "]";
	response->setHTTPResponseStatus(HTTPResponseStatus::Ok);
	response->setContent_type(ContentTypes::CONTENT_TYPE_TEXT_PLAIN);
	response->setContent_str(temvec);
	cout << "Processed input request inside DefaultRestController..." << endl;
```

```
}

void DefaultRestController::testObject(TestMany testMany)
{
	buildResponse(HTTPResponseStatus::Ok, "TestMany", &testMany);
	cout << "Processed input request inside DefaultRestController..." << endl;
}


void DefaultRestController::testVectorObject(vector<TestMany> param)
{
	buildResponseVector(HTTPResponseStatus::Ok, "TestMany", &param);
	cout << "Processed input request inside DefaultRestController..." << endl;
}
}

void DefaultRestController::testUploadFile(ifstream* ifs, string param)
{
	string vals;
	unsigned int siz = 0;
	if (ifs!=NULL && ifs->is_open())
	{
		ifs->seekg(0, ios::end);
		siz = ifs->tellg();
	}
	vals = "Uploaded File Size = " + CastUtil::lexical_cast<string>(siz);
	vals += "\nField value passed = " + param;

	response->setHTTPResponseStatus(HTTPResponseStatus::Ok);
	response->addHeaderValue(HttpResponse::ContentType, ContentTypes::CONTENT_TYPE_TEXT_PLAIN);
	response->setContent(vals);
	cout << "Processed input request inside DefaultRestController for testUploadFile..." + response->generateResponse() << endl;
}

void DefaultRestController::testUploadFileMulti1(ifstream* ifs1, ifstream* ifs2, ifstream* ifs3, string param)
{
	string vals;
	unsigned int siz = 0;
	if (ifs1!=NULL && ifs1->is_open())
	{
		ifs1->seekg(0, ios::end);
		siz = ifs1->tellg();
	}
	vals = "Uploaded File1 Size = " + CastUtil::lexical_cast<string>(siz);
	siz = 0;
	if (ifs2!=NULL && ifs2->is_open())
	{
		ifs2->seekg(0, ios::end);
		siz = ifs2->tellg();
	}
	vals += "\nUploaded File2 Size = " + CastUtil::lexical_cast<string>(siz);
	siz = 0;
	if (ifs3!=NULL && ifs3->is_open())
	{
		ifs3->seekg(0, ios::end);
		siz = ifs3->tellg();
	}
	vals += "\nUploaded File3 Size = " + CastUtil::lexical_cast<string>(siz);
	vals += "\nField value passed = " + param;

	response->setHTTPResponseStatus(HTTPResponseStatus::Ok);
	response->addHeaderValue(HttpResponse::ContentType, ContentTypes::CONTENT_TYPE_TEXT_PLAIN);
	response->setContent(vals);
	cout << "Processed input request inside DefaultRestController for testUploadFileMulti1..." + response->generateResponse() << endl;
}

void DefaultRestController::testUploadFileMulti2(vector<ifstream*> vifs, string param)
{
	string vals;
	for(int i=0;i<(int)vifs.size();++i) {
		ifstream* ifs = vifs.at(i);
		unsigned int siz = 0;
		if (ifs!=NULL && ifs->is_open())
		{
			ifs->seekg(0, ios::end);
			siz = ifs->tellg();
		}
		vals += "Uploaded File" + CastUtil::lexical_cast<string>(i) + " Size = " + CastUtil::lexical_cast<string>(siz) + "\n";
	}
	vals += "Field value passed = " + param;

	response->setHTTPResponseStatus(HTTPResponseStatus::Ok);
	response->addHeaderValue(HttpResponse::ContentType, ContentTypes::CONTENT_TYPE_TEXT_PLAIN);
	response->setContent(vals);
	cout << "Processed input request inside DefaultRestController for testUploadFileMulti2..." + response->generateResponse() << endl;
}
```

Config for rest service in application.xml

```
<restcontrollers>
		<restcontroller class="DefaultRestController" urlpath="/rest/path/" name="rest1">
			<restfunction name="addNumbers" alias="add/{1}/{2}" meth="GET">
				<param type="int" name="1" from="path"/>
				<param type="int" name="2" from="path"/>
			</restfunction>
```

```
        </restcontroller>
        <restcontroller class="DefaultRestController" urlpath="/rest/reqparam/" name="rest1">
            <restfunction name="addNumbers" alias="add" meth="GET">
                <param type="int" name="1" from="reqparam"/>
                <param type="int" name="2" from="reqparam"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" urlpath="/rest/postparam/" name="rest1">
            <restfunction name="addNumbers" alias="add" meth="POST">
                <param type="int" name="1" from="postparam"/>
                <param type="int" name="2" from="postparam"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" urlpath="/rest/header/" name="rest1">
            <restfunction name="addNumbers" alias="add" meth="GET">
                <param type="int" name="1" from="header"/>
                <param type="int" name="2" from="header"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" urlpath="/rest/path1/" name="rest2">
            <restfunction name="addNumbers" alias="+/{1}/{2}" meth="GET">
                <param type="int" name="1" from="path"/>
                <param type="int" name="2" from="path"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="rest3">
            <restfunction name="addNumbers" alias="ad/{1}/{2}" meth="GET">
                <param type="int" name="1" from="path"/>
                <param type="int" name="2" from="path"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController">
            <restfunction name="power" meth="GET" baseUrl="/rest/controller/base{1}/power/exp{2}">
                <param type="int" name="1" from="path"/>
                <param type="int" name="2" from="path"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController">
            <restfunction name="addNumbers" meth="GET" alias="addNumbers/{1}/{2}">
                <param type="int" name="1" from="path"/>
                <param type="int" name="2" from="path"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="restvec">
            <restfunction name="testVector" alias="tstvec" meth="POST">
                <param type="vector-of-int" from="body"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="restvecobj">
            <restfunction name="testVectorObject" alias="tstvecobj" meth="POST" icontentType="application/json">
                <param type="vector-of-TestMany" from="body"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="restobj">
            <restfunction name="testObject" alias="tstobj" meth="POST" icontentType="application/json" ocontentType="application/json">
                <param type="TestMany" from="body"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="restvecobj">
            <restfunction name="testVectorObject" alias="tstvecobj.xml" meth="POST" icontentType="application/xml">
                <param type="vector-of-TestMany" from="body"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="restobj">
            <restfunction name="testObject" alias="tstobj.xml" meth="POST" icontentType="application/xml">
                <param type="TestMany" from="body"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="restupload">
            <restfunction name="testUploadFile" alias="uploadFile" meth="POST" icontentType="multipart/form-data">
                <param type="filestream" name="file" from="multipart-content"/>
                <param type="string" name="field" from="multipart-content"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="restupload">
            <restfunction name="testUploadFileMulti1" alias="uploadFileMulti1" meth="POST" icontentType="multipart/form-data">
                <param type="filestream" name="file1" from="multipart-content"/>
                <param type="filestream" name="file2" from="multipart-content"/>
                <param type="filestream" name="file3" from="multipart-content"/>
                <param type="string" name="field" from="multipart-content"/>
            </restfunction>
        </restcontroller>
        <restcontroller class="DefaultRestController" name="restupload">
            <restfunction name="testUploadFileMulti2" alias="uploadFileMulti2" meth="POST" icontentType="multipart/form-data">
                <param type="vector-of-filestream" name="files" from="multipart-content"/>
                <param type="string" name="field" from="multipart-content"/>
            </restfunction>
        </restcontroller>
    </restcontrollers>
```

ffead-cpp

c++ framework, c++ web framework, c++ application framework, c++ security framework, c++ rest framework, c++ soap framework, Framework for Enterprise Application Development, c++ web sites,c++ web applications, c++ driven web development - c++

MultipartFileUploadSupport

Multipart File Upload Support

Updated Today (32 minutes ago) by sumeet.chhetri@gmail.com

Please refer the RestController page for more information on how to configure multipart file upload

FViews

FFEAD Views

Updated Jul 15, 2011 by sumeet.chhetri@gmail.com

FFEAD View or **FView** is a strategy where major view handling code is generated by the Server, all you need to do is just write plain HTML pages and define a corresponding **fviews.xml** file, it also provides easy javascript ajax methods for DOM events. Arguments to be sent to the server and callback can also be specified.

Every page in the XML file has a backing Page (**TestPage**) class for handling the DOM AJAX events.

You can define Form backing beans in the configuration file (fview.xml) and define your Bean (**TestForm**) class and a controller (**TestFormController**) responsible for handling the Submit action of the form. The Data from the HTML form is automagically converted to the bean class and fed to the controller onSubmit method.

The only point to be noted is that the URL in the action attribute in the form should end with **.form** extension which should also be the case in the xml config file. Also note the mapping of the form input parameter names to the **TestForm** class properties. All javascript functions can be written in the functions tag inside the page element.

HTML Page (test.html)

```
<html>
	<head>
	</head>
	<body>
		<p id="para">sdfsadsa</p>
		<input type="text" value="sdfsa" id="text"/>
		<a id="link" href="#">Testing</a>
		<form id="tform" action="/default/test.form" method="get" >
			TextField: <input type="text" value="" name="txtField"/>
			NumField: <input type="text" value="" name="numField"/>
			ChooseField: <select name="selField"><option value="1">One</option><option value="2">Two</option></select>
			<input type="submit" value="Submit"/>
		</form>
	</body>
</html>
```

Example fview.xml

```
<fview>
	<page htm="test.html" class="TestPage">
		<event eid="text" type="onclick" func="textonclick" args="1,document.getElementById('link').innerText,'Hello'" cb="alert(response.responseTe
		<event eid="link" type="onclick" func="linkonclick" cb="document.getElementById('para').innerHTML=response;alert(response.responseText)"/
		<functions>
			<![CDATA[
				function test()
				{
					alert("Hello />");
				}
			]]>
		</functions>
		<form name="test.form" bean="TestForm" controller="TestFormController">
			<field name="txtField" prop="txt"/>
			<field name="numField" prop="num"/>
			<field name="selField" prop="che"/>
		</form>
	</page>
</fview>
```

TestPage

HEADER FILE

```
#ifndef TESTPAGE_H_
#define TESTPAGE_H_
#include "string"
using namespace std;
class TestPage {
public:
	TestPage();
	virtual ~TestPage();
	string textonclick(int,string,string);
	int linkonclick();
};

#endif /* TESTPAGE_H_ */
```

CPP FILE

```
#include "TestPage.h"
TestPage::TestPage() {
	// TODO Auto-generated constructor stub

}

TestPage::~TestPage() {
	// TODO Auto-generated destructor stub
}

string TestPage::textonclick(int a,string b,string c)
{
	return "Test Successfull" + b + c;
}

int TestPage::linkonclick()
{
	return 12345;
}
```

TestForm

HEADER FILE

```
#ifndef TESTFORM_H_
#define TESTFORM_H_
#include "string"
using namespace std;

class TestForm {
	int num;
	string txt;
	string che;
public:
	TestForm();
	virtual ~TestForm();
	string getChe() const;
    int getNum() const;
    string getTxt() const;
    void setChe(string che);
    void setNum(int num);
    void setTxt(string txt);
};

#endif /* TESTFORM_H_ */
```

CPP FILE

```
#include "TestForm.h"
TestForm::TestForm() {
	// TODO Auto-generated constructor stub

}

string TestForm::getChe() const
{
    return che;
}

int TestForm::getNum() const
{
    return num;
}

string TestForm::getTxt() const
{
    return txt;
}

void TestForm::setChe(string che)
{
    this->che = che;
}

void TestForm::setNum(int num)
{
    this->num = num;
}

void TestForm::setTxt(string txt)
{
    this->txt = txt;
}

TestForm::~TestForm() {
	// TODO Auto-generated destructor stub
}
```

TestFormController

HEADER FILE

```
#ifndef TESTFORMCONTROLLER_H_
#define TESTFORMCONTROLLER_H_
#include "HttpResponse.h"
#include "TestForm.h"
#include "iostream"

class TestFormController {
public:
	TestFormController();
	virtual ~TestFormController();
	void onSubmit(void*,HttpResponse*);
};

#endif /* TESTFORMCONTROLLER_H_ */
```

CPP FILE

```
#include "TestFormController.h"

TestFormController::TestFormController() {
	// TODO Auto-generated constructor stub

}

TestFormController::~TestFormController() {
	// TODO Auto-generated destructor stub
}

void TestFormController::onSubmit(void* vform,HttpResponse* res)
{
	TestForm* form = (TestForm*)vform;
	res->setStatusCode("200");
	res->setStatusMsg("OK");
	res->setContent_type("text/plain");
	res->setContent_str(form->getTxt()+form->getChe());
	cout << form->getTxt()+form->getChe() << "inside TestFormController" << endl;
}
```

ffead-cpp

c++ framework, c++ web framework, c++ application framework, c++ security framework, c++ rest framework, c++ soap framework, Framework for Enterprise Application Development, c++ web sites,c++ web applications, c++ driven web development - c++

ExampletpeFile

An Example .tpe file

ffead, cpp, template, example, file

Updated Today (25 minutes ago) by sumeet.chhetri@gmail.com

Example Template file

```
#declare vector<string> vect#
#declare Test test#
#declare int number#
#declare string dat#
<html>
	<head>
		<script src="${dat}"></script>
		${dat}
		$_S{test.getId()}
	</head>
	<body>
		<input type="text"/>
		<input type="submit"/>
		#for(int i=0;i<number;i++)#
			<input type="text" name="input$_S{i}"/>
		#rof#
		#for(int i=0;i<(int)vect.size();i++)#
			<input type="text" name="input${vect.at(i)}"/>
		#rof#
		#if(number==0)#
			<p>No input fields present</p>
		#fi#
		<p><span>$_S{test.getId()}</span><span>${test.getName()}</span></p>
	</body>
</html>
```

ExampleTemplateImpl

An Example Template Implementation

ffead, cpp, template, example, implementation

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

ExampleTemplate.h

```
#ifndef EXAMPLETEMPLATE_H_
#define EXAMPLETEMPLATE_H_
#include "TemplateHandler.h"

class ExampleTemplate: public TemplateHandler {
public:
	ExampleTemplate();
	virtual ~ExampleTemplate();
	Context getContext();
};
#endif /* EXAMPLETEMPLATE_H_ */
```

ExampleTemplate.cpp

```
ExampleTemplate::ExampleTemplate()
{}
ExampleTemplate::~ExampleTemplate()
{}
Context ExampleTemplate::getContext()
{
	Context cntxt;
	/*Add template variables to Context*/
	return cntxt;
}
```

ExampledcpFile

An Example .dcp file

ffead, cpp, dcp, dynamic, page

Updated Jul 30, 2012 by sumeet.chhetri@gmail.com

Example Dynamic C++ Page

```
<DCPH>
#include "string"
#include <iostream>
using namespace std;
</DCPH>
<html>
<head>
</head>
<body>
<input type="text"/>
lsdflsdkfjsdlflk
<DCPB>
string h;
h = "Hello World!!";
</DCPB>
<import>/home/sumeet/server/web/default/dcp/testheader.dcp</import>
<input type="submit"/>
<input type="text"/>

<DCPB>
//Goes to the server console
cout << h << flush;
</DCPB>

<DCPB>
for(int i=0;i<10;i++)
{
</DCPB>
<input type="text"/>
<DCPB>
}
</DCPB>
<DCPF>
void printscrn()
{
	//Goes to the server console
	cout << "Hello World from function!!" << flush;
}
</DCPF>

</body>
</html>
```

Comment by nawe...@gmail.com, Jan 6, 2012

Ciao

ExampleComponent

Example Component File

ffead, cpp, example, implementation, component, service, business, logic

Updated Jul 30, 2012 by sumeet.chhetri@gmail.com

Example Component Configuration

```
#The Component Name, Should be unique
@CMP_NAME=TEST_BEAN

#The Component Description
@CMP_DESC=Test Bean

#Is The Component available Through Ajax
@AJAX_AVAIL=true

#Is the Component exposed as a Web-Service
@WEBS_AVAIL=true

#Can the Component be additionally invoked using MI
@MINV_AVAIL=true

#Is AUTO Trnsaction enabled?
@AUTO_TRANS=true

#The Threading Strategy
@THRD_PER_REQ=false

#The Thread Pool size
@THRD_POOL_NUM=20

#The Authorization source
@AUTH_FROM=database

#The Details of the Auth Source
@AUTH_DETS=@DB

#Is Authorization required for All Services?
@AUTH_ALL=false

#The User Groups that can access the Services
@USR_GRP_ALWD=UG_1,UG_2,UG_3

#The Users that are Blocked.
@BLOCK_USERS=user1,user2

#The Protocols allowed
@PROTO_ALWD=tcp,http,udp

#The DB connection Pool Size
@DB_CONN_POOL_NUM=10

#The Auth Connection Source
@AUTH_CONN_SRC=test_dsn

#The Auth Source User Name
@AUTH_USR_NAME=test

#The Auth Source User Password
@AUTH_USR_PASS=test

#The Auth Source Address
@AUTH_ADD=

#Are Sessions allowed
@SESSION=false

#The Service Details
#@NAME is the Service Name
#@USR_GRP_ALWD are the User Groups allowed to access the Component
#@SIGNATURE is the Service signature
#@ARGS are the arguments required for the Service
#SRV_RET is the Service Return type
@SERVICE1=@NAME(myFirstService) @USR_GRP_ALWD(UG_1,UG_2) @SIGNATURE(Service1.service1) @ARGS(void) @SRV_RET(string)
@SERVICE2=@NAME(mySecondService) @BLOCK_USERS(user7) @SIGNATURE(Service2.service2) @ARGS(string) @SRV_RET(string)
```

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ExampleComponentServices

Example Component Service Implementations

ffead, cpp, component, service, implementation, example

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

Service1.h

```
#ifndef SERVICE1_H_
#define SERVICE1_H_
#include "string"
#include "ServiceInt.h"
using namespace std;

class Service1 :public ServiceInt{
public:
	Service1();
	virtual ~Service1();
	string service1();
};

#endif /* SERVICE1_H_ */
```

Service2.h

```
#ifndef SERVICE2_H_
#define SERVICE2_H_
#include "string"
#include "ServiceInt.h"
using namespace std;
class Service2 : public ServiceInt{
public:
	Service2();
	virtual ~Service2();
	string service2(string);
};

#endif /* SERVICE2_H_ */
```

TestComponent

Example Component Usage

ffead, cpp, business, component, remote, function, call, logic, example

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

TestComponent.cpp

```
/*
Client code can use a Remote Bean to invoke Business Logic
Local Applications/Modules can use the Local Bean instance
Trying to get Local Bean instance from client code will throw exception
*/
#include "BeanContext.h"
#include "Component_TEST_BEAN_Remote.h"
#include "Component_TEST_BEAN.h"

int main()
{
	/*Declare the BeanContext with the remote component listening host and port*/
	BeanContext cntxt("localhost",7001);

	/*Get the Remote Bean Instance*/
	Component_TEST_BEAN_Remote *remote = (Component_TEST_BEAN_Remote*)cntxt.lookup("TEST_BEAN");

	string a ="Hello Business Logic!!";
	if(remote!=NULL)
	{
		/*Invoke the remote method on the Bean*/
		cout << remote->mySecondService(a) << flush;
	}

	/*The Below line should throw exception*/
	Component_TEST_BEAN local;
	return 1;
}
```

ExampleDynamicViewImpl

An Example DynamicView Implementation

ffead, cpp, dynamic, view, dview, example, implementation

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

ExampleDynamicView.h

```
#ifndef EXAMPLEDynamicView_H_
#define EXAMPLEDynamicView_H_
#include "DynamicView.h"

class ExampleDynamicView: public DynamicViewHandler {
public:
	ExampleDynamicView();
	virtual ~ExampleDynamicView();
	Document getDocument();
};
#endif /* EXAMPLEDynamicView_H_ */
```

ExampleDynamicView.cpp

```
ExampleDynamicView::ExampleDynamicView()
{}
ExampleDynamicView::~ExampleDynamicView()
{}
Document ExampleDynamicView::getDocument()
{
	Document doc;
	/*Create a Document object*/
	return doc;
}
```

DependencyInjection

Dependency Injection in FFEAD

cpp, dependency, injection, setter, constructor, interface, ffead

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

deplnj.xml

```
<beans>
   <!--Define a new Bean of type TestBeanProp and inject objects as properties
      Setter Injection
   -->
   <bean name="testBeanProp" class="TestBeanProp" injectAs="prop">
      <!--Inject bean with name dependencyBean1-->
      <inject bean="dependencyBean1">
      <!--Inject bean with name dependencyBean2-->
      <inject bean="dependencyBean2">
      <!--Inject bean with type DependencyBean3-->
      <inject name="dependencyBean3" class="DependencyBean3">
      <!--Inject a string with value-->
      <inject name="strProp" inbuilt="string" value="Hello ">
   </bean>
   <!--Define a new Bean of type DependencyBean1-->
   <bean name="dependencyBean1" class="DependencyBean1"/>
   <!--Define a new Bean of type DependencyBean2-->
   <bean name="dependencyBean2" class="DependencyBean2"/>


   <!--Define a new Bean of type TestBeanCons and inject objects as constructor args
      Constructor Injection
   -->
   <bean name="testBeanCons" class="TestBeanCons" injectAs="cons">
      <!--Inject an integer value-->
      <inject name="intProp" inbuilt="int" value="1234">
      <!--Inject a boolean value-->
      <inject name="boolProp" inbuilt="bool" value="true">
      <!--Inject bean with type DependencyBean4-->
      <inject name="dependencyBean4" class="DependencyBean4">
   </bean>


   <!--Define a new Bean of type TestBeanIntf and inject objects as compatible interfaces
      Interface Injection
   -->
   <bean name="testBeanIntf" class="TestBeanIntf" injectAs="intf">
      <!--Inject bean with interface type DepDependencyBean1-->
      <inject intfType="DepDependencyIntf1">
      <!--Inject bean with interface type DepDependencyBean2-->
      <inject intfType="DepDependencyIntf2">
   </bean>
   <!--Define a new Bean of type DepDependencyBean1Impl which implements DepDependencyIntf1 interface-->
   <bean name="dependencyIntfImpl1" class="DepDependencyBean1Impl"/>
   <!--Define a new Bean of type DepDependencyBean2Impl which implements DepDependencyIntf2 interface-->
   <bean name="dependencyIntfImpl2" class="DepDependencyBean2Impl"/>
</beans>
```

SetterInjection

Implementation files for Setter Injection

cpp, setter, injection, ffead

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

```
class TestBeanProp
{
private:
   string *strProp;
   DependencyBean1 *dependencyBean1;
   DependencyBean2 *dependencyBean2;
   DependencyBean3 *dependencyBean3;
public:
   void setStrProp(string *strProp)
   {
      this->strProp = strProp;
   }
   string* getStrProp()
   {
      return this->strProp;
   }

   void setDependencyBean1(DependencyBean1 *dependencyBean1)
   {
      this->dependencyBean1 = dependencyBean1;
   }
   DependencyBean1* getDependencyBean1()
   {
      return this->dependencyBean1;
   }

   void setDependencyBean2(DependencyBean2 *dependencyBean2)
   {
      this->dependencyBean2 = dependencyBean2;
   }
   DependencyBean2* getDependencyBean2()
   {
      return this->dependencyBean2;
   }

   void setDependencyBean3(DependencyBean3 *dependencyBean3)
   {
      this->dependencyBean3 = dependencyBean3;
   }
   DependencyBean3* getDependencyBean3()
   {
      return this->dependencyBean3;
   }

   void print()
   {
      cout << *(this->strProp) << fflush;
      this->dependencyBean1->print();
      this->dependencyBean2->print();
      this->dependencyBean3->print();
   }
};

class DependencyBean1
{
public:
   void print()
   {
      cout << "Wo" << fflush;
   };
};

class DependencyBean2
{
public:
   void print()
   {
      cout << "rl" << fflush;
   };
};

class DependencyBean3
{
public:
   void print()
```

```
  {
    cout << "d!!" << fflush;
  };
};
```

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ffead-cpp

c++ framework, c++ web framework, c++ application framework, c++ security framework, c++ rest framework, c++ soap framework, Framework for Enterprise Application Development, c++ web sites,c++ web applications, c++ driven web development - c++

ConstructorInjection

Implementation files for Constructor Injection

cpp, constructor, injection, ffead

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

```
class TestBeanCons
{
private:
   int *intProp;
   bool *boolProp;
   DependencyBean4 *dependencyBean4;
public:
   TestBeanCons(int *intProp,bool *boolProp,DependencyBean4 *dependencyBean4)
   {
      this->intProp = intProp;
      this->boolProp = boolProp;
      this->dependencyBean4 = dependencyBean4;
   }

   int* getIntProp()
   {
      return this->intProp;
   }

   bool* getBoolProp()
   {
      return this->boolProp;
   }

   DependencyBean4* getDependencyBean4()
   {
      return this->dependencyBean4;
   }

   void print()
   {
      if(*(this->boolProp))
      {
         this->dependencyBean4->print();
         cout << *(this->intProp) << fflush;
      }
   }
};

class DependencyBean4
{
public:
   void print()
   {
      cout << "Hello World " << fflush;
   }
};
```

ffead-cpp

c++ framework, c++ web framework, c++ application framework, c++ security framework, c++ rest framework, c++ soap framework, Framework for Enterprise Application Development, c++ web sites,c++ web applications, c++ driven web development - c++

InterfaceInjection

Implementation files for Interface Injection

cpp, interface, injection, ffead

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

```
class TestBeanIntf
{
private:
   DependencyIntf1 *dependencyIntf1;
   DependencyIntf2 *dependencyIntf2;
public:
   void DependencyIntf1(DependencyIntf1 *dependencyIntf1)
   {
      this->dependencyIntf1 = dependencyIntf1;
   }
   DependencyIntf1* getDependencyIntf1()
   {
      return this->dependencyIntf1;
   }

   void DependencyIntf2(DependencyIntf2 *dependencyIntf2)
   {
      this->dependencyIntf2 = dependencyIntf2;
   }
   DependencyIntf2* getDependencyIntf2()
   {
      return this->dependencyIntf2;
   }

   public void print()
   {
      this->getDependencyIntf1()->print1();
      this->getDependencyIntf2()->print2();
   }
};

class DependencyIntf1
{
public:
   virtual void print1()=0;
};

class DependencyIntf2
{
public:
   virtual void print2()=0;
};

class DepDependencyBean1Impl : public DependencyIntf2
{
public:
   void print1()
   {
      cout <<"Hello " << fflush;
   }
};

class DepDependencyBean2Impl : public DependencyIntf2
{
public:
   void print2()
   {
      cout "World!!" << fflush;
   }
};
```

BootstrapDependencyInjection

Bootstrapping Dependency Injection

ffead, cpp, dependency, injection, bootstrap, example

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

```
#include "FFEADContext.h"
#include "TestBeanProp.h"
#include "TestBeanCons.h"
#include "TestBeanIntf.h"

int main()
{
   FFEADContext *cntxt = new FFEADContext("/path/to/depInj.xml");

   //Get the testBeanProp from the container
   TestBeanProp *testBeanProp = (TestBeanProp*)cntxt->getBean("testBeanProp");
   testBeanProp->print();

   //Get the testBeancons from the container
   TestBeanCons *testBeanCons = (TestBeanCons*)cntxt->getBean("testBeanCons");
   testBeanCons->print();

   //Get the testBeanPIntf from the container
   TestBeanIntf *testBeanIntf = (TestBeanIntf*)cntxt->getBean("testBeanIntf");
   testBeanIntf->print();

   //Clean up resources
   cntxt->clear();
   return 1;
}

/*
The output of the following program would be
Hello World!!Hello World 1234Hello World!!
*/
```

ExampleThreadPoolUsage

Example Thread Pool Usage

cpp, thread, pool, scheduled, priority, direct, ffead

Updated Feb 3, 2013 by sumeet.chhetri@gmail.com

ThreadPoolTest.cpp

```
using namespace std;
#include "ThreadPool.h"
#include "CastUtil.h"

class MyTask : public Task
{
	float j;
public:
	MyTask(float j){this->j = j;}
	~MyTask(){}
	void run()
	{
		cout << "Task run " << j << "\n"<< flush;
	}
	string toString()
	{
		return ("Task No "+CastUtil::lexical_cast<string>(j));
	}
};

void testDirectExecution()
{
	/*Declare a Thread Pool with Min 2 and Max 5 Threads*/
	ThreadPool pool(2,5,true);
	/*Create a Task*/
	mytask task1(1);
	mytask task2(2);
	mytask task3(3);
	mytask task4(4);
	mytask task5(5);
	/*Execute The Task*/
	pool.execute(task1);
	pool.execute(task2);
	pool.execute(task3);
	pool.execute(task4);
	pool.execute(task5);
	/*Wait for completion of all Tasks*/
	pool.joinAll();
}

void testPrioritizedExecution()
{
	/*Declare a Thread Pool with Min 2 and Max 5 Threads, with Low 1 and 4 High Priority*/
	ThreadPool pool(2,5,1,4,true);
	/*Create a Task*/
	mytask task1(1);
	mytask task2(2);
	mytask task3(3);
	mytask task4(4);
	mytask task5(5);
	/*Execute The Tasks on priority*/
	pool.execute(task1,2);
	pool.execute(task2,4);
	pool.execute(task3,4);
	pool.execute(task4,1);
	pool.execute(task5,4);
	/*Wait for completion of all Tasks*/
	pool.joinAll();
}

void testScheduledExecution()
{
	/*Declare a Thread Pool with Min 2 and Max 5 Threads*/
	ThreadPool pool(2,5,true);
	/*Create a Task*/
	mytask task1(1);
	mytask task2(2);
	mytask task3(3);
	mytask task4(4);
	mytask task5(5);
	/*Schedule a task to be executed after the defined delay period*/
	pool.schedule(task1,10,TimeUnit::MILLISECONDS);
	pool.schedule(task2,10,TimeUnit::SECONDS);
```

```
	pool.schedule(task3,1,TimeUnit::HOURS);
	pool.schedule(task4,10,TimeUnit::DAYS);
	pool.schedule(task5,110,TimeUnit::MILLISECONDS);
	/*Wait for completion of all Tasks*/
	pool.joinAll();
}

void testDirectScheduledExecution()
{
	/*Declare a Thread Pool with Min 2 and Max 5 Threads*/
	ThreadPool pool(2,5,true);
	mytask task1(1);
	mytask task2(2);
	mytask task3(3);
	mytask task4(4);
	mytask task5(5);
	/*Schedule a task to be executed after the defined delay period*/
	pool.schedule(task1,10,TimeUnit::MILLISECONDS);
	pool.schedule(task2,10,TimeUnit::SECONDS);
	/*Execute the task*/
	pool.execute(task3);
	pool.schedule(task4,10,TimeUnit::DAYS);
	pool.execute(task5);
	/*Wait for completion of all Tasks*/
	pool.joinAll();
}


int main()
{
	/*Test the Direct Thread Pooling mechanism*/
	testDirectExecution();
	/*Test the Scheduled Thread Pooling mechanism*/
	testScheduledExecution();
	/*Test the Priority Driven Thread Pooling mechanism*/
	testPrioritizedExecution();
	/*Test the Mixed Thread Pooling mechanism*/
	testDirectScheduledExecution();
	return 0;
}
```

Futures

Example Thread Pool Usage

Updated Today (67 minutes ago) by sumeet.chhetri@gmail.com

ThreadPoolTest.cpp

```
using namespace std;
#include "ThreadPool.h"
#include "CastUtil.h"

class myFuturetask : public FutureTask
{
	float j;
public:
	myFuturetask(float j){this->j = j;}
	~myFuturetask(){}
	void* call()
	{
		cout << "FutureTask run " << j << "\n"<< flush;
		return new string(toString());
	}
	string toString()
	{
		return ("FutureTask No "+CastUtil::lexical_cast<string>(j));
	}
};

void testDirectFutureTaskExecution()
{
	/*Declare a Thread Pool with Min 2 and Max 5 Threads*/
	ThreadPool pool(1,5,true);
	pool.start();
	/*Create a Task*/
	myFuturetask*task1 = new myFuturetask(1);
	myFuturetask task2(2);
	myFuturetask task3(3);
	myFuturetask task4(4);
	myFuturetask task5(5);
	/*Execute The Task*/
	pool.submit(*task1);
	cout << *(string*)task1->getResult() << endl;
	cout << "add done" << endl;
	pool.submit(task2);
	pool.submit(task3);
	pool.submit(task4);
	pool.submit(task5);
	cout << *(string*)task5.getResult() << endl;
	cout << *(string*)task4.getResult() << endl;
	cout << *(string*)task3.getResult() << endl;
	cout << *(string*)task2.getResult() << endl;
	/*Wait for completion of all Tasks*/
	pool.joinAll();
}



int main()
{
	/*Test the Futures based Direct Thread Pooling mechanism*/
	testDirectFutureTaskExecution();
	return 0;
}
```

TestCppInterpreter

Example Cpp Interpreter Usage

ffead, cpp, interpreter, eval

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

TestCppInterpreter.cpp

```
#include "CppInterpreter.h"

int main()
{
	/*Create Interpreter Instance*/
	CppInterpreter cpi;

	/*Declare Local variables*/
	int a = 0,b=10;
	string b = "hello!!";

	/*Bind the desired variables to the Interpreter*/
	cpi.bind<int>("a",a);
	cpi.bind<int>("b",b);

	/*Evaluate the Code String*/
	cpi.eval("while(a<15){a+=3;if(b<50){b+=10;}}");
	cpi.eval("while(a<15){a+=3;}");
	cpi.eval("int y=2;string h=\"fsdfsdfsdfsdf\";for(a=20;a>0;a--){b+=10;y++;}");
	cpi.eval("if(a==2){a=8;}else if(b==11){a=90;}else while(a<50){a++;}");
	cpi.eval("a=10-2+8-6;");

	/*Display the Modified variables*/
	cout << a << flush;
	cout << "\n" << flush;
	cout << b << flush;
	cout << "\n" << flush;
	return 1;
}
```

ffead-cpp

c++ framework, c++ web framework, c++ application framework, c++ security framework, c++ rest framework, c++ soap framework, Framework for Enterprise Application Development, c++ web sites,c++ web applications, c++ driven web development - c++

TestReflection

Example Reflection Usage

cpp, reflection, support, ffead

Updated Aug 16, 2010 by sumeet.chhetri@gmail.com

```
#include "Reflector"
#include "Test.h"

int main()
{
	Reflector reflector;
	ClassInfo clas = reflector.getClassInfo("Test");
	args argus;
	argus.push_back("int");
	vals valus;
	int ids = 1;
	valus.push_back(&ids);
	Method meth = clas.getMethod("setId",argus);
	reflector.invokeMethod<void*>(clas.getInstance(),meth,valus);
	argus.clear();
	meth = clas.getMethod("getId",argus);
	int id = reflector.invokeMethod<int>(clas.getInstance(),meth,valus);
	cout << id << flush;cout << "\n" << flush;
	Field fld = clas.getField("id");
	void* idp = reflector.getField(clas.getInstance(),fld);
	Test *p = new Test;
	cout << p->getId() << flush;cout << "\n" << flush;
	cout << reflector.instanceOf(clas.getInstance(),"Test") << flush;
	bool fl;
	cout << "static::" << Object::instanceOf(*p,"Test") << "\n" << flush;
	cout << reflector.instanceOf(reflector,"Test") << flush;
	cout << reflector.instanceOf(clas,"Test") << flush;
}
```

TestSerialization

Example Serialization Usage

cpp, serialization, support, ffead

Updated Today (82 minutes ago) by sumeet.chhetri@gmail.com

```
#include <iostream>
#include "string"
#include "TestMany.h"
#include "TestForm.h"
#include "TestSTLs.h"
#include "BinarySerialize.h"
#include "XMLSerialize.h"
#include "JSONSerialize.h"

using namespace std;

int main() {

	TestMany tm;
	tm.t.setId(1);
	tm.t.setName("test");

	tm.y = 2;

	tm.vd.push_back(0.1);
	tm.vd.push_back(1.1);
	tm.vd.push_back(2.1);
	tm.vd.push_back(3.1);
	tm.vd.push_back(4.1);

	tm.vi.push_back(0);
	tm.vi.push_back(1);
	tm.vi.push_back(2);
	tm.vi.push_back(3);
	tm.vi.push_back(4);

	tm.vl.push_back(0);
	tm.vl.push_back(1);
	tm.vl.push_back(2);
	tm.vl.push_back(3);
	tm.vl.push_back(4);

	tm.vs.push_back("1");
	tm.vs.push_back("2");
	tm.vs.push_back("3");
	tm.vs.push_back("4");
	tm.vs.push_back("5");

	YObject yo;
	yo.i = 1;
	yo.j = "1";
	yo.c = 1.1;
	tm.vyo.push_back(yo);
	yo.i = 2;
	yo.j = "2";
	yo.c = 1.2;
	tm.vyo.push_back(yo);

	BinarySerialize ser;
	string binstr = ser.serialize<TestMany>(tm);

	TestMany tmn = ser.unserialize<TestMany>(binstr);
	cout << tmn.vi.size()<<tmn.vl.size()<<tmn.vd.size()<<tmn.vs.size()<<tmn.vyo.size()<<tmn.t.getId()<<tmn.t.getName()<<tm.y << endl;

	binstr = ser.serializeUnknown(&tm, "TestMany");
	TestMany* tmp = (TestMany*)ser.unSerializeUnknown(binstr, "TestMany");
	tmn = *tmp;
	cout << tmn.vi.size()<<tmn.vl.size()<<tmn.vd.size()<<tmn.vs.size()<<tmn.vyo.size()<<tmn.t.getId()<<tmn.t.getName()<<tm.y << endl;

	XMLSerialize xser;
	binstr = xser.serialize<TestMany>(tm);

	tmn = xser.unserialize<TestMany>(binstr);
	cout << tmn.vi.size()<<tmn.vl.size()<<tmn.vd.size()<<tmn.vs.size()<<tmn.vyo.size()<<tmn.t.getId()<<tmn.t.getName()<<tm.y << endl;

	binstr = xser.serializeUnknown(&tm, "TestMany");
	tmp = (TestMany*)xser.unSerializeUnknown(binstr, "TestMany");
	tmn = *tmp;
	cout << tmn.vi.size()<<tmn.vl.size()<<tmn.vd.size()<<tmn.vs.size()<<tmn.vyo.size()<<tmn.t.getId()<<tmn.t.getName()<<tm.y << endl;
```

```
    JSONSerialize jser;
    binstr = jser.serialize<TestMany>(tm);

    tmn = jser.unserialize<TestMany>(binstr);
    cout << tmn.vi.size()<<tmn.vl.size()<<tmn.vd.size()<<tmn.vs.size()<<tmn.vyo.size()<<tmn.t.getId()<<tmn.t.getName()<<tm.y << endl;

    binstr = jser.serializeUnknown(&tm, "TestMany");
    tmp = (TestMany*)jser.unSerializeUnknown(binstr, "TestMany");
    tmn = *tmp;
    cout << tmn.vi.size()<<tmn.vl.size()<<tmn.vd.size()<<tmn.vs.size()<<tmn.vyo.size()<<tmn.t.getId()<<tmn.t.getName()<<tm.y << endl;


    TestSTLs stls;
    stls.vli.push_back(1);
    stls.vlsh.push_back(1);
    stls.vll.push_back(1);
    stls.vld.push_back(1.1);
    stls.vlb.push_back(true);
    stls.vls.push_back("1");
    stls.vlyo.push_back(yo);

    stls.vvi.push_back(1);
    stls.vvsh.push_back(1);
    stls.vvl.push_back(1);
    stls.vvd.push_back(1.1);
    stls.vvb.push_back(true);
    stls.vvs.push_back("1");
    stls.vvyo.push_back(yo);

    Test tst;
    tst.setId(1);
    tst.setName("1");

    stls.vsi.insert(1);
    stls.vssh.insert(1);
    stls.vsl.insert(1);
    stls.vsd.insert(1.1);
    stls.vss.insert("1");
    stls.vsyo.insert(tst);

    stls.vmsi.insert(1);
    stls.vmssh.insert(1);
    stls.vmsl.insert(1);
    stls.vmsd.insert(1.1);
    stls.vmss.insert("1");
    stls.vmsyo.insert(tst);

    stls.vdi.push_back(1);
    stls.vdsh.push_back(1);
    stls.vdl.push_back(1);
    stls.vdd.push_back(1.1);
    stls.vdb.push_back(true);
    stls.vds.push_back("1");
    stls.vdyo.push_back(yo);

    stls.vqi.push(1);
    stls.vqsh.push(1);
    stls.vql.push(1);
    stls.vqd.push(1.1);
    stls.vqb.push(true);
    stls.vqs.push("1");
    stls.vqyo.push(yo);

    stls.vpppli = new list<int>;
    stls.vpppli->push_back(1);

    binstr = ser.serialize<TestSTLs>(stls);
    cout << stls.toString() << endl;

    TestSTLs stlsn = ser.unserialize<TestSTLs>(binstr);
    cout << stlsn.toString() << endl;

    binstr = xser.serialize<TestSTLs>(stls);
    cout << stlsn.toString() << endl;

    stlsn = xser.unserialize<TestSTLs>(binstr);
    cout << stlsn.toString() << endl;

    binstr = jser.serialize<TestSTLs>(stls);
    cout << stlsn.toString() << endl;

    stlsn = jser.unserialize<TestSTLs>(binstr);
    cout << stlsn.toString() << endl;
}
```