webMethods Integration Server FTP Utility Package

SimpleFTP Package User Guide
Version 3.0

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Date	Author	Rev	Change Description
Feb 15, 2005	Igor Androsov	0.1	Created initial draft.

Overview

The SimpleFTP utility package for webMethods Integration Server has been designed to enable standard FTP processing common to integration. SimpleFTP package integrates as component into webMethods Integration Server and provides functionality of FTP polling similar to standard feature of polling ports. It allows inbound and outbound file transfer. As a component of Integration Server this package works with Integration Server Cluster and scheduler to provide task oriented processing.

webMethods Integration Platform

The webMetods integration platform provides the next generation of business process management and integration solutions that enable companies to achieve a global visibility of their business - both internal and external.

Through the seamless integration of a company's core information systems and people with those of their business partners, webMethods enables true end-to-end automation of the entire extended enterprise.

By blurring corporate boundaries and providing the capabilities to freely exchange the information that drives business processes, enterprises are empowered in new ways to operate more efficiently, reduce costs, increase revenues and working capital, and to ultimately gain significant competitive advantage.

With the webMethods integration platform, you can:

- Model and automate business processes within the enterprise and across your network of business partners
- Integrate all facets of your enterprise and business.
- Manage your environment and get a global view of every aspect of your operations.
- Optimize your processes, refine and improve your operations and business performance.

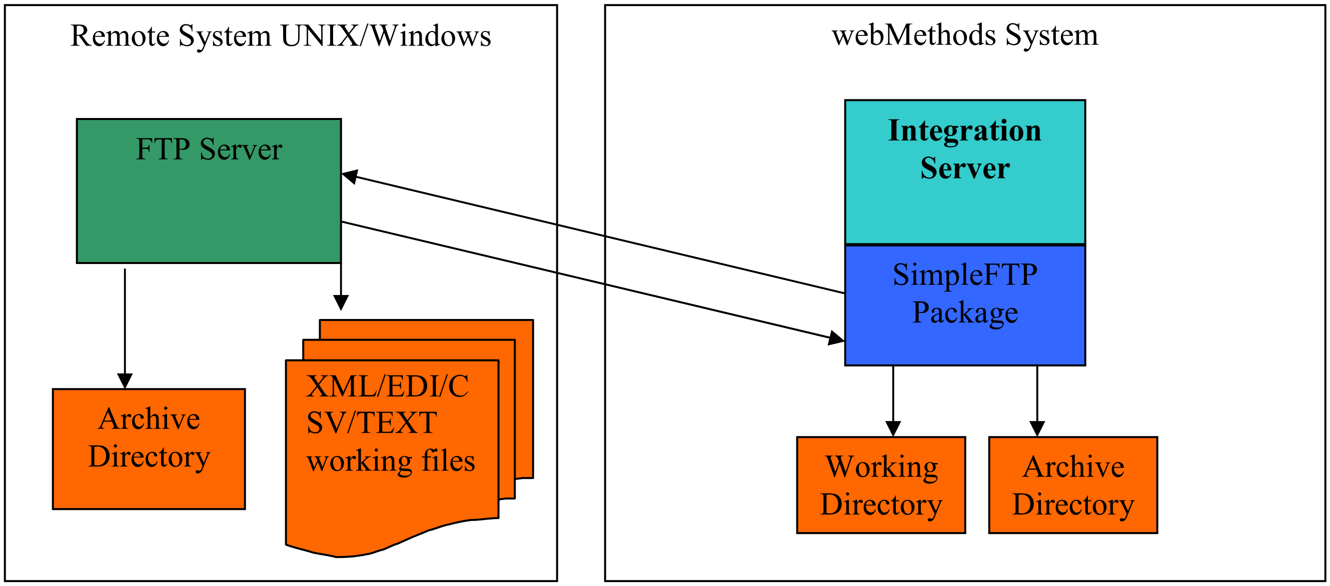
webMethods' service-based architecture helps to Web service-enable and integrate existing enterprise applications, databases, business processes, and business partners.

Purpose

This document describes the technical information for webMethods SimpleFTP utility package, and deployment details of FTP integration process.

Architecture Overview

The SimpleFTP package is designed for webMethods Integration Server. It is working as an adapter to extend standard functionality. The SimpleFTP package using built in Integration Server FTP services extends FTP processing to next level. It provides FTP file polling for inbound and out bound processing. SimpleFTP package enables automated file transfers for implementing file based integration processing such as typical of flat files or other types of files.



The **INBOUND** process SimpleFTP package moves files from remote FTP server to local file system. The package will login to remote FTP server with defined Alias. Upon successful login SimpleFTP package initiates change to source directory and get file listing. Based on files returned the package will start file transport for each file in sequential order and they are returned form FTP server. Depending on selected options after each file transfer is complete the SimpleFTP package will issue a command to FTP server to archive a file on remote server or remove the file. If all account privileges are granted and all activities are complete the file transfer is successful. The package continues to the next file transfer or finishes the process.

To keep integrity of the FTP processing SimpleFTP package is using additional directory structure that is created at the time of Alias definition. The package defines work_in directory for internal use. For inbound process files are transferred into work_in temporary directory. As soon as transport is completed the file is moved to target directory defined inside an alias. This process insures that no partial data file is used for processing until its completely transported by FTP.

Typical SimpleFTP package directory structure is described below as an example:

/ftp/localdata
/ftp/localarchive
/ftp/work_in

The **OUTBOUND** process SimpleFTP package moves files from local file system to remote FTP server. The SimpleFTP package performs a directory listing on local directory defined as source in the Alias. The package will login to remote FTP server with defined Alias. Upon successful login SimpleFTP package initiates change to target directory. Based on local list of files the package will start file transport for each file in sequential order. Depending on selected options after each file transfer is complete the SimpleFTP package will issue a command to archive a file on local server or remove the file. If all account privileges are granted and all activities are complete the file transfer is successful. The package continues to the next outbound file transfer or finishes the process.

NOTE: For outbound process files are transported directly to remote location. There are no additional steps is taken by SimpleFTP package. There are no working or temporary directories are created on remote server.

SimpleFTP Package Detailed Description

SimpleFTP Package Components

This section specifies the components of B2B Client program

SimpleFTP.zip – Integration Server standard package installed as Adapter.

System Requirements

This section specifies SimpleFTP Package's system requirements.

OS – UNIX or Windows 2000/2003/NT/XP (All supported platform of Integration Server)
JVM – Supported JVM of Integration Server
Memory – min 64MB max 128MB

NOTE: For SimpleFTP package to function correctly the user account defined to execute Integration Server must have enough system privileges to create directories at run time in target local file system folder defined inside an alias and read/write files access. The user account provided for FTP server must have privileges to get and put files on FTP location, move files within file system and provide file listings.

The current deployment target systems are currently supported systems by webMethods Integration Server.

Platform and Operating System	Supported JREs
Microsoft Windows 2000 Professional, Server, and Advanced Server	JRE 1.3.1 and 1.4.2
Microsoft Windows XP Professional	JRE 1.3.1 and 1.4.2
Microsoft Windows Server 2003 Standard Edition, Enterprise Edition (32-bit), and Datacenter Edition (32-bit)	JRE 1.3.1 and 1.4.2
Sun Solaris 8 and 9 (both 64-bit)	JRE 1.4.2
Hewlett-Packard HP-UX 11i v1 for PA-RISC(64-bit) and HP-UX 11i v2 for Itanium2	JRE 1.4.1
IBM AIX 5.1 and 5.2 (both 64-bit)	JRE 1.4.1
Red Hat Enterprise Linux AS 2.1 and ES 2.1	JRE 1.4.2

SimpleFTP Deployment Directory structure

This section specifies the SimpleFTP package's directory structure for deployment. The directory structure follows standard Integration Server package directory structure.

```
<Integration Server>
        packages
                SimpleFTP
                        code
                                classes
                                        SimpleFTP
                                jars
                                source
                        config
                        doc
                        lib
                        ns
                                SimpleFTP
                                        ftp
                                        test
                                        schedule
                                        util
                                                flow
                                                input
                        pub
                                ftp
                        resources
                        templates
                        web
```

SimpleFTP package is installed as standard Integration Server adapter and extends FTP functionality for webMethods platform. SimpleFTP package provides functionality of automated FTP client to Integration Server and enables FTP inbound and outbound file transports.

SimpleFTP Configuration

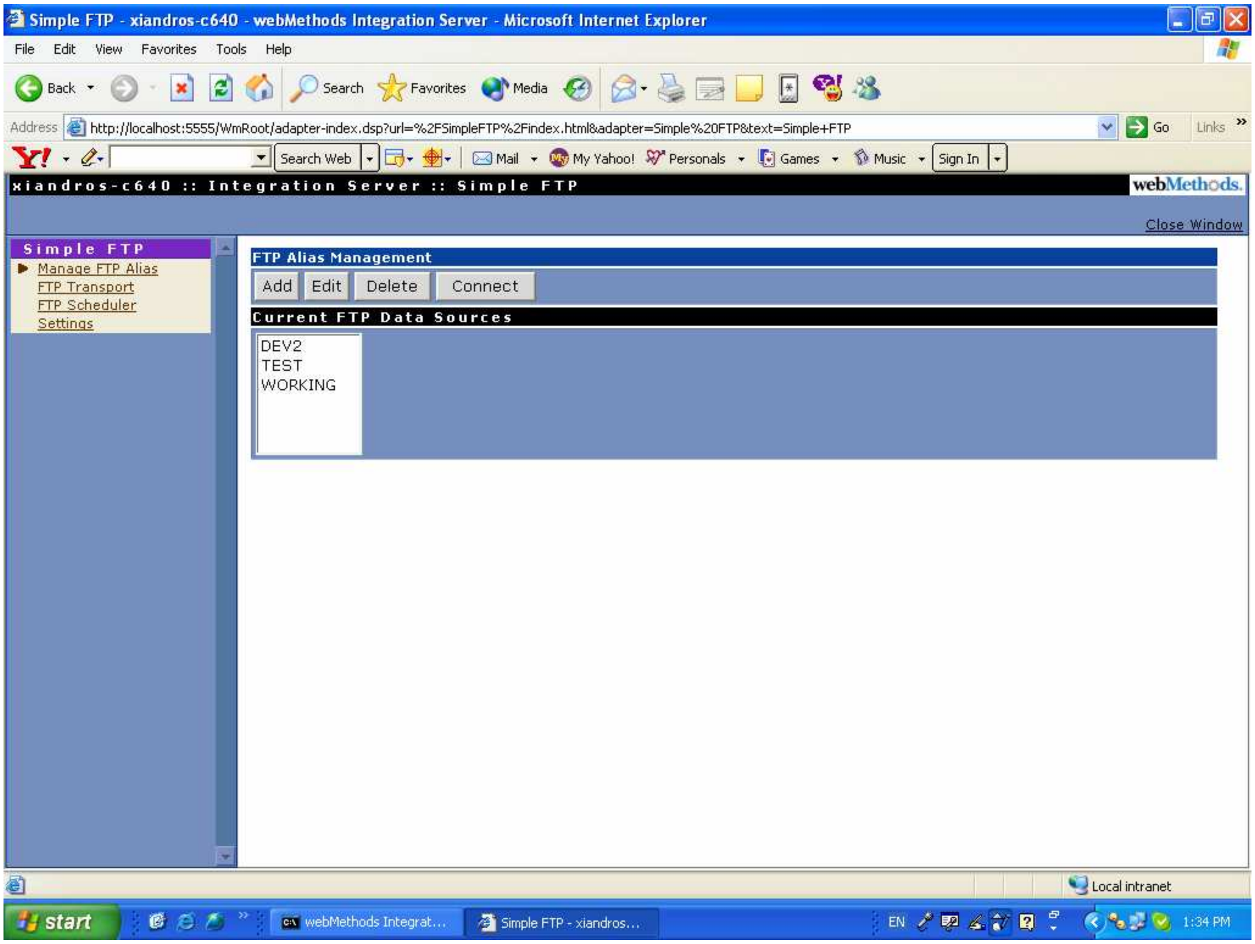
This section describes the configuration available for SimpleFTP package. All configuration of SimpleFTP package is performed from browser based administrator. The administrative functions are started from Integration Server Administrator's page from Adpaters/SimpleFTP menu option. The configuration parameters are stored in an internal format XML configuration file located in standard package config directory. However, user will never need to edit or maintain this file manually. All administrative functions are available from SimpleFTP Administrator's Pages.

FTP Server Alias

The SimpleFTP package is based on concept of FTP server Alias. The alias allows user to manage and organize multiple FTP servers. User can define an FTP server alias for each FTP server planned to connect and get files from or put files. The FTP alias identifies remote FTP server providing detailed parameters and options to connect to ftp server and perform file transports. User can define unlimited number of FTP aliases based on number of required FTP servers. User my optionally create more than a single alias for any given FTP server. Multiple aliases can be useful in cases when user needs to filter different files or provide different source and target location local and remote for file transfers. It allows for flexibility to manage different behavior and support number of complex FTP based integrations.

The FTP Aliases are created and managed from SimpleFTP Administrator's page. User can create, update or delete any of the aliases as required. Any alias can be disabled for simple step to suspend FTP processing in real time. Disabled or inactive aliases will be ignored as default behavior of FTP transport service.

To define new or manage existing FTP Alias user can use *Manage FTP Alias* menu option from Simple FTP Administrator page as described bellow. This page also allows user to test existing FTP Alias for valid connection. Select an alias from the list and by using *Connect* button user can initiate FTP server login and get file listing from FTP server. If connection was a success the result will display a listing of files from FTP server.


Simple FTP - xiandros-c640 - webMethods Integration Server - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://localhost:5555/WmRoot/adapter-index.dsp?url=%2FSimpleFTP%2Findex.html&adapter=Simple%20FTP&text=Simple+FTP
Go Links
Search Web Mail My Yahoo! Personals Games Music Sign In
xiandros-c640 :: Integration Server :: Simple FTP
webMethods.
Close Window
Simple FTP
Manage FTP Alias
FTP Transport
FTP Scheduler
Settings
FTP Alias Management
Add
Edit
Delete
Connect
Current FTP Data Sources
DEV2
TEST
WORKING
Local intranet
start
webMethods Integrat...
Simple FTP - xiandros...
EN
1:34 PM

FTP Server Alias Settings

The following table describes settings available for each FTP alias:

Option	Description
Alias	any user defined name (must be single word and may contain mixed characters, case sensitive)
FTP server host	machine name or IP address of host system where FTP server is running.
FTP server port	port used by FTP server (default port 21 for most standard ftp)
User	User id provided to login to remote FTP server.
Password	password used for authentication to login to FTP server.
File Search mask	file search filter used by FTP command on remote server to display list of files (can be wildcard * or directory type mask fore example *.txt will return only list of files with extension of txt.
Local Working Directory	Directory defined on the local server where SimpleFTP package is hosted. This directory will be used as target

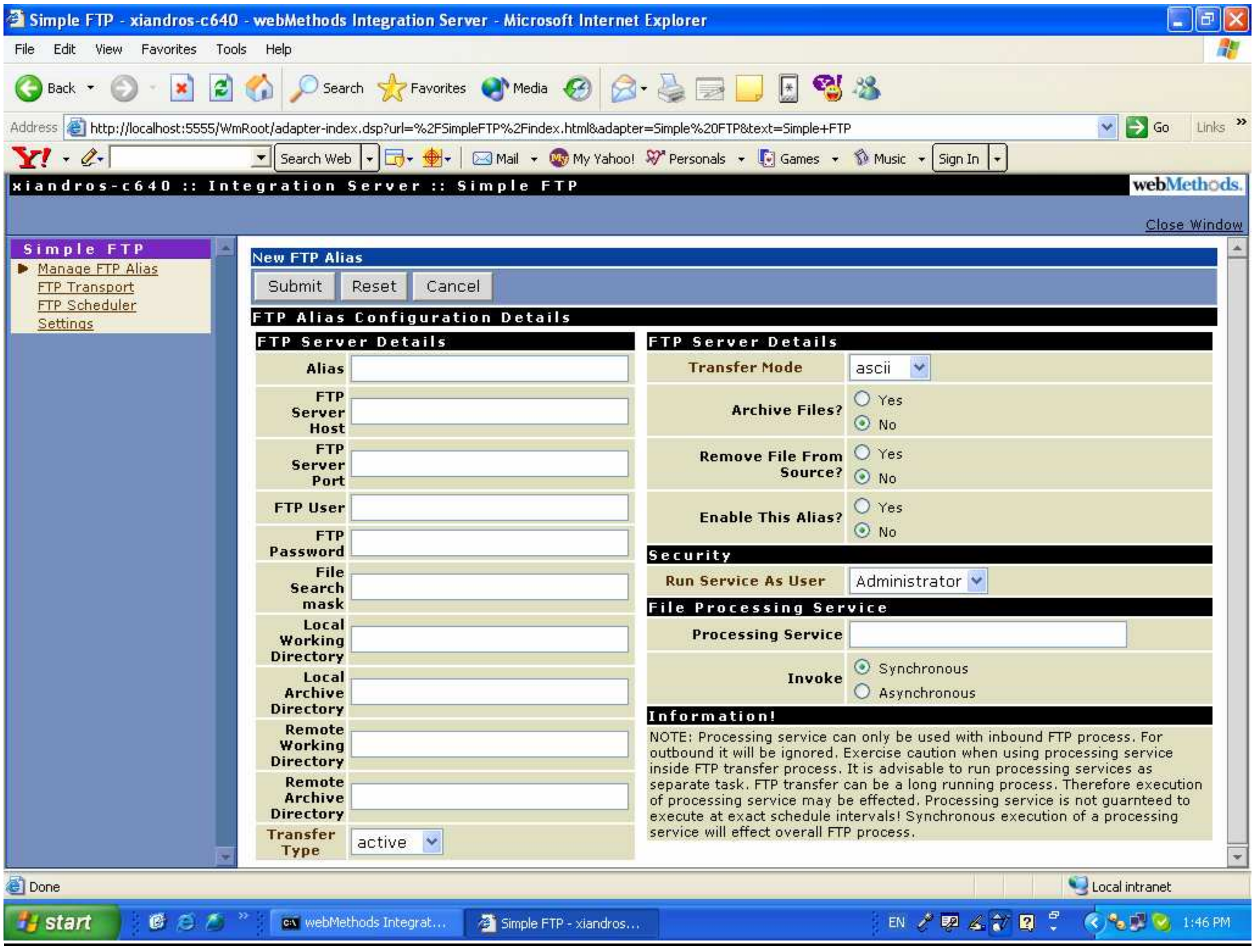
	directory for inbound file transfers.
Local Archive Directory	Directory defined on the local server where SimpleFTP package is hosted. This directory will be used as target directory for inbound file transfers.
Remote Working Directory	directory defined on remote FTP server to get or pt files to and from depending on the transport process. In case of inbound file transfer files will be transported from this remote directory into local working directory. In case of outbound files will be moved form local working directory into remote working directory.
Remote Archive Directory	archive directory defined on remote FTP server to archive files upon request.
Transfer Type	standard type of FTP transfer can be (active/passive)
Transfer Mode	standard FTP transfer mode (ascii/binary)
Archive Files	Request to archive files. In case of inbound process archive is attempted on remote FTP server. Files are moved to remote archive directory. For outbound transfer files are archived in local archive directory. This option is mutually exclusive with - Remove File From Source.
Remove File From Source	Request to Remove files form source location after successful transport. This option will delete source files after transport on local or remote location depending on type of transfer.
Enable This Alias	Enable this alias upon creation. By default all new aliases are created as disabled. User must manually enable a new alias using this option or use administrator after alias was created.

Processing Service

FTP Alias provides user with an option to define a custom processing service. This service will be used to process files after FTP transfer has completed. The use of this option creates some constraints on FTP process and must be carefully considered. Only single default processing service can be defined. FTP transfer process may be a long running task depending on size, number of files and network speed. Therefore introducing an automated processing of these files may affect ftp transfer. For example if processing service is executed synchronously and takes up a long time this may cause FTP server to time out and abort transfer of other files in the list. Use of this option is fully dependent on condition of FTP processing and integration required.

The table below describes options defined for processing service:

Option	**Description**
Run Service As User (Security)	Select a user account on Integration Server to execute default processing service.
Processing Service	Full name of processing service
Invoke Type	Select type of invocation synchronous – run as part of FTP transfer task, asynchronous - execute service on separate thread.


Simple FTP - xiandros-c640 - webMethods Integration Server - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://localhost:5555/WmRoot/adapter-index.dsp?url=%2FSimpleFTP%2Findex.html&adapter=Simple%20FTP&text=Simple+FTP
Go Links
Search Web Mail My Yahoo! Personals Games Music Sign In
xiandros-c640 :: Integration Server :: Simple FTP
webMethods.
Close Window
Simple FTP
Manage FTP Alias
FTP Transport
FTP Scheduler
Settings
Submit Reset Cancel
Done
Local intranet
start
webMethods Integrat...
Simple FTP - xiandros...
EN
1:46 PM

New FTP Alias

FTP Alias Configuration Details

FTP Server Details

Alias	
FTP Server Host	
FTP Server Port	
FTP User	
FTP Password	
File Search mask	
Local Working Directory	
Local Archive Directory	
Remote Working Directory	
Remote Archive Directory	
Transfer Type	active

FTP Server Details

Transfer Mode	ascii
Archive Files?	○ Yes ● No
Remove File From Source?	○ Yes ● No
Enable This Alias?	○ Yes ● No

Security

Run Service As User	Administrator

File Processing Service

Processing Service	
Invoke	● Synchronous ○ Asynchronous

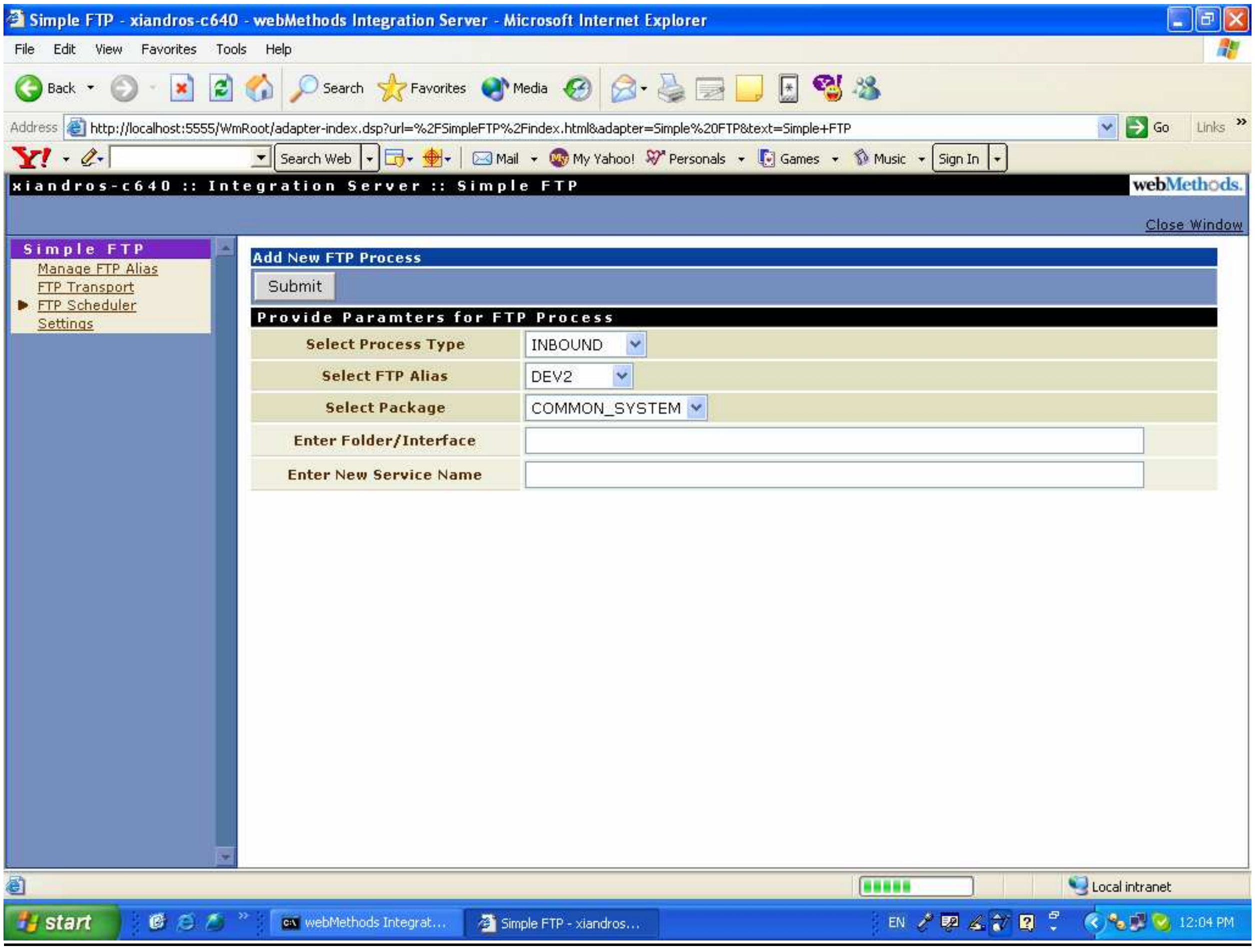
Information!

NOTE: Processing service can only be used with inbound FTP process. For outbound it will be ignored. Exercise caution when using processing service inside FTP transfer process. It is advisable to run processing services as separate task. FTP transfer can be a long running process. Therefore execution of processing service may be effected. Processing service is not guarnteed to execute at exact schedule intervals! Synchronous execution of a processing service will effect overall FTP process.

The above picture describes the Administration page provided by SimpleFTP package to add or create a new alias.

Run Schedule FTP Task

This section describes the schedule task option available for SimpleFTP package. The ftp transport can be triggered as an event by user process or it can be defined as scheduled task. A schedule task can be defined within Integration Server scheduler to run at predefined time intervals and perform file transfers to remote FTP server or file polling form a remote FTP server. To define and schedule user task for FTP process user can use SimpleFTP administration page or create it manually using Integration Server scheduler. The SimpleFTP package schedule task creation will generate a new generic simple service that will be scheduled and execute new FTP task. The default service is a simple flow service that is generated as result of user action on Administrative page. To create a task user must select FTP Scheduler option from administrator menu. Then select FTP process type (inbound/outbound), FTP Alias, package where the scheduled task to be created and provide the folder and name of a new service. Next step user must define schedule interval for FTP task. This activity is designed as simple wizard taking user step by step in creating scheduled FTP task.



Address: http://localhost:5555/WmRoot/adapter-index.dsp?url=%2FSimpleFTP%2Findex.html&adapter=Simple%20FTP&text=Simple+FTP

Add New FTP Process

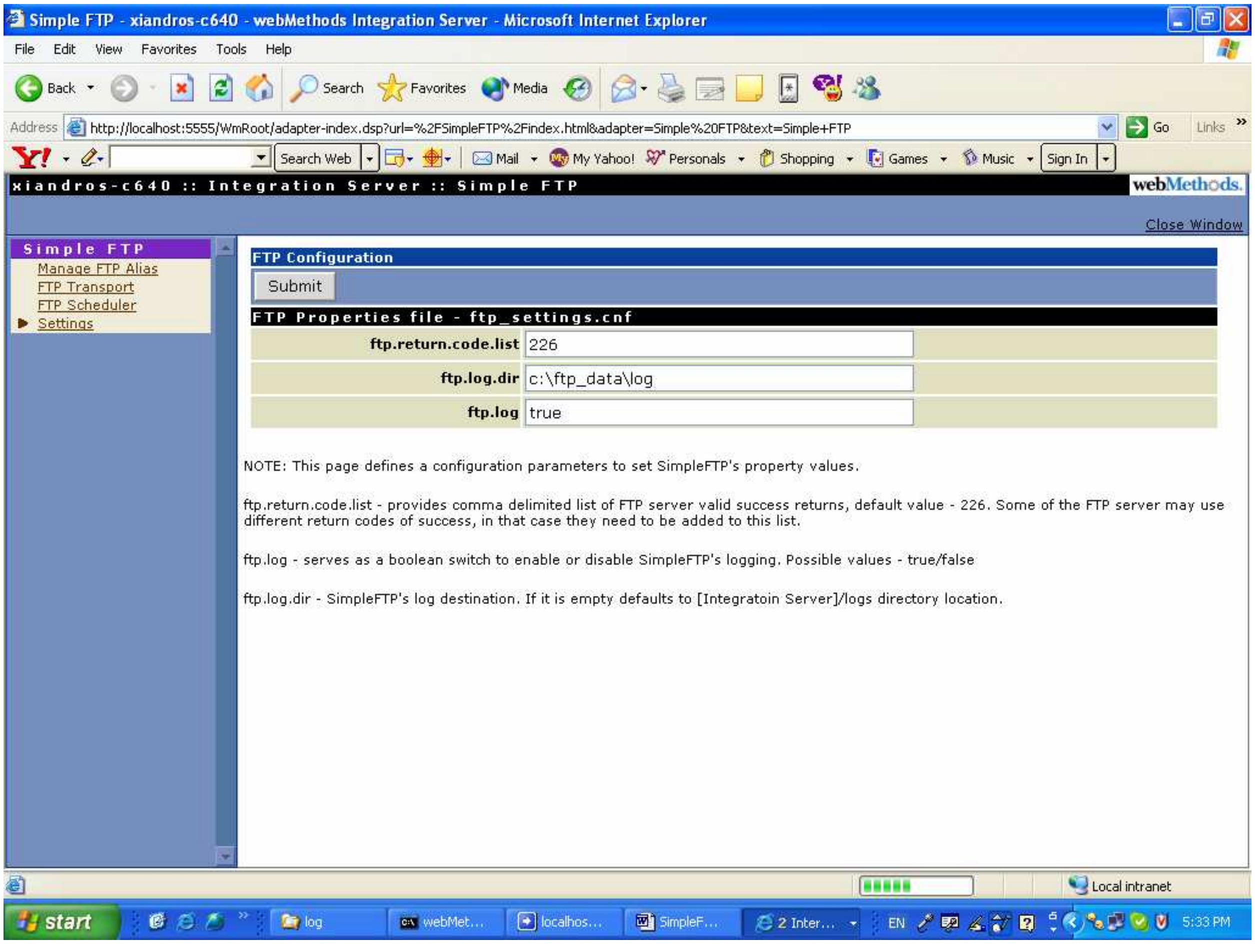
Submit

Provide Paramters for FTP Process

Select Process Type	INBOUND
Select FTP Alias	DEV2
Select Package	COMMON_SYSTEM
Enter Folder/Interface	
Enter New Service Name	

SimpleFTP Package Logging

This section provides details on logging performed by SimpleFTP package during processing. SimpleFTP package designed to perform logging and data archiving for audit trace and error resolution. It creates audit log detailing the FTP transport steps it takes to transport a file data and status of each step for every file transferred. Audit log is optional and controlled by user configuration. The audit log files are based on 24-hour cycle (daily), there is an audit log file for each day SimpleFTP is running in operation. If there are no files to process audit log will not be created. To start SimpleFTP's logging configuration page select Settings from Simple FTP Administration page:



Simple FTP - xiandros-c640 - webMethods Integration Server - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://localhost:5555/WmRoot/adapter-index.dsp?url=%2FSimpleFTP%2Findex.html&adapter=Simple%20FTP&text=Simple+FTP
Go Links
Search Web Mail My Yahoo! Personals Shopping Games Music Sign In
xiandros-c640 :: Integration Server :: Simple FTP
webMethods.
Close Window
Simple FTP
Manage FTP Alias
FTP Transport
FTP Scheduler
Settings
Local intranet
start log webMet... localhos... SimpleF... 2 Inter... EN 5:33 PM

FTP Configuration

Submit

FTP Properties file - ftp_settings.cnf

ftp.return.code.list	226
ftp.log.dir	c:\ftp_data\log
ftp.log	true

NOTE: This page defines a configuration parameters to set SimpleFTP's property values.

ftp.return.code.list - provides comma delimited list of FTP server valid success returns, default value - 226. Some of the FTP server may use different return codes of success, in that case they need to be added to this list.

ftp.log - serves as a boolean switch to enable or disable SimpleFTP's logging. Possible values - true/false

ftp.log.dir - SimpleFTP's log destination. If it is empty defaults to [Integratoin Server]/logs directory location.

From this page user can configure all logging options available for SimpleFTP package. There are three parameters configurable by user:

ftp.return.code.list – provides user with option to define a comma delimited list of non standard FTP server success return codes. This option is usefull while working with not standard FTP servers that use sometimes custom success return codes for success status other than 226. These return codes will cause ftp process to interpret a result of file transfer incorrectlty. This option rectifies this problem.
ftp.log.dir – provides a user defined location of FTP log files to be stored

ftp.log – provides user with ability to turn off and on FTP logging feature (true – ON, false – OFF)

NOTE: Distribution of SimpleFTP package provides defaults for these values typical for Windows deployment. Users are advised to change these defaults to fit their deployment platform.

Bellow is a sample FTP log file that typical SimpleFTP file transfer creates:

```
[10/28/2004 01:32:35 218]---<-- 220 Microsoft FTP Service
--> USER wmadmin

<-- 331 Password required for wmadmin.
--> PASS XXXXXXXX
<-- 230 User wmadmin logged in.
--> TYPE A

<-- 200 Type set to A.

[10/28/2004 01:32:35 218]-----> CWD /test/data

<-- 250 CWD command successful.

[10/28/2004 01:32:35 228]-----> PASV
--> PASV

<-- 227 Entering Passive Mode (127,0,0,1,15,178).
--> NLST *.txt

<-- 125 Data connection already open; Transfer starting.
<-- 226 Transfer complete.

[10/28/2004 01:32:35 248]---Start FTP for file - c:\ftp_data\testdir\work_in\a1.txt
[10/28/2004 01:32:35 248]-----> TYPE A

<-- 200 Type set to A.
--> PASV
--> PASV

<-- 227 Entering Passive Mode (127,0,0,1,15,180).
--> RETR a1.txt

<-- 125 Data connection already open; Transfer starting.
<-- 226 Transfer complete.

[10/28/2004 01:32:35 278]---Archive file on remote location
[10/28/2004 01:32:35 278]---Start FTP for file - c:\ftp_data\testdir\work_in\a2.txt
```

```
[10/28/2004 01:32:35 288]-----> TYPE A

<-- 200 Type set to A.
--> PASV
--> PASV

<-- 227 Entering Passive Mode (127,0,0,1,15,182).
--> RETR a2.txt

<-- 125 Data connection already open; Transfer starting.
<-- 226 Transfer complete.

[10/28/2004 01:32:35 308]---Archive file on remote location
[10/28/2004 01:32:35 308]---Start FTP for file - c:\ftp_data\testdir\work_in\a3.txt
[10/28/2004 01:32:35 348]-----> TYPE A

<-- 200 Type set to A.
--> PASV
--> PASV

<-- 227 Entering Passive Mode (127,0,0,1,15,184).
--> RETR a3.txt

<-- 125 Data connection already open; Transfer starting.
<-- 226 Transfer complete.

[10/28/2004 01:32:35 368]---Archive file on remote location
[10/28/2004 01:32:35 378]-----> quit

<-- 221
```

Create SimpleFTP Processing Service

This section provides details on creating a custom processing service for SimpleFTP package. Processing service is typically used inside integration to process files transported by FTP process. This can be a flow or java service created for Integration Server. Processing service must have input parameter defined as – string type parameter named: *file_name.* As alternative user may use an input service specification defined and distributed with SimpleFTP package located at:
SimpleFTP.util.input:processing_service_input
This paramter will contain a fully qualified file name and path.
The processing service must open the file and read it based on providded location. Service can contain any logic required to process a file.

SimpleFTP Services

This section provides details on services provided with SimpleFTP package. User can use these services to extend or modify behavior of this package or create their own custom FTP processing. Main ftp services are created as flows for easy modification and provided with complete source. Java services source code is not provided as part of the standard package distribution. However, user may use existing java services and create their own if required to extend this package functionality.

FTP Services

SimpleFTP.schedule:ftp_transport_get – service provides inbound file transfer functionality based on alias provided as input. This service transfers files from remote FTP server to local file system.

SimpleFTP.schedule:ftp_transport_get – service provides outbound file transfer functionality based on alias provided as input. This service transfers files from local file system to remote FTP server.

The set of ftp service located in SimpleFTP.ftp folder allow user programatiaclly manage FTP alias.

SimpleFTP.ftp:ftp_alias_add – add new FTP alias
SimpleFTP.ftp:ftp_alias_delete – remove existing alias
SimpleFTP.ftp:ftp_alias_edit – edit/change existing alias
SimpleFTP.ftp:ftp_alias_get – get existing FTP alias with all paramters
SimpleFTP.ftp::ftp_alias_list_get – get list of all defined FTP aliases