Active Media Connector Overview

Active Circle Storage System

Active Circle REST API

Version 4.6

Abstract

This document gives an overview of the prerequisites, architecture, and services of the Active Media Connector.

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Introduction

The purpose of the Active Media Connector (AMC) is to provide a service-oriented programming interface for integrating the Active Circle Storage System. To achieve this, Active Circle has created an API based on REST web services and Java. The API makes it possible for a client application to perform many Active Circle Storage System operations.

The Active Media Connector provides access to resources (data entities) via URI paths. To use this REST API, your application will make an HTTP request and parse the response. The response format used is JSON. The AMC services use standard HTTP methods like GET, PUT, POST and DELETE. Because the AMC is based on open standards, you can use any web development language to access it.

This guide provides an overview of the Active Media Connector. Once installed, the complete reference documentation can be accessed directly through the AMC server web page.

Prerequisites

The Active Media Connector contains a web application running in a Java application server. It requires the installation of a database. The table belows lists the software necessary for installing and running the AMC.

Table 1. Prerequisites for the Active Media Connector

Type	Software
Operating System	CentOS Linux 7.0 or higher
Java	Java 8
Application Server	Apache Tomcat 7
Database	PostgreSQL
Storage System	Active Circle version 4.6 or higher

Note

The CentOS Linux 6.X operating system is only supported for existing systems.

The AMC can be installed on a dedicated server or on one of the servers (nodes) that are part of the Active Circle system.

The AMC installer is fully automatic. Please see the *AMC Installation Guide* for detailed instructions on how to install and configure the AMC and its prerequisites.

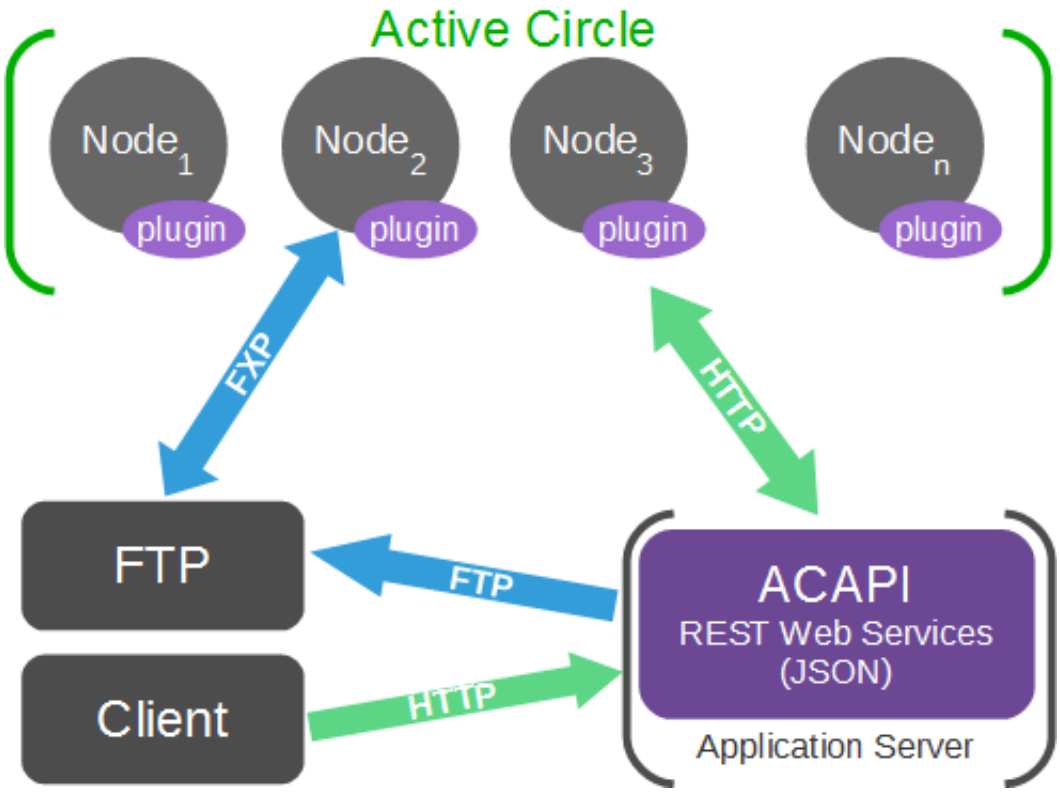
Architecture

The Active Media Connector is based on REST Web services, using standard protocols and formats. The basic features are:

- HTTP for client requests and communication between API and nodes
- Plugin on each node manages communication with API
- Requests and responses use JSON
- File transfers in FXP directly between Active Circle and the FTP server
- Basic HTTP authentication

The following diagram describes the general architecture of the solution.

Figure 1. Active Media Connector Architecture



The client application queries the AMC using the HTTP protocol. The communication between the AMC and the nodes also uses HTTP, whether the requests are initiated by the AMC or the nodes.

The AMC web application, which is called "acapi", is hosted on a Tomcat application server that manages the protocols. This server can be an Active Circle node or a dedicated server. The nodes communicate with the AMC through a plugin that can be deployed and updated on each node, without having to restart the host node. Internally, the AMC uses a database which is hidden from the client and the circle. The metadata of the Active Circle system are duplicated in this database.

The AMC directs the data transfer between the FTP servers and Active Circle using FXP (File eXchange Protocol).

Web Services

The following Web Services have been implemented in the Active Media Connector:

Table 2. AMC Web Services

Service	Description
DataSource	Manages servers that you can use as source or destination for transfer jobs. The dataSource request resource provides functionality to create, update, list and delete.
File	Gets information about files and folders stored (archived) in Active Circle.
FileAudit	Lists file events in Active Circle (CREATE, DELETE, MOVE, ARCHIVE, etc.).
Node	Provides information about the nodes in the Active Circle configuration (mainly used for configuration purposes).
Tape	Provides tape location information. This includes tape type/capacity, bar code, pool information, accessibility status and library element location.
TapeAudit	Lists tapes events during a given time period. Tape events include: • the removal or insertion of a tape in the library • the deletion of a tape content • the removal of a tape from the Active Circle system • the addition of a new tape to the library
TransferJob	Manages all job types through the same interface. The transferJob request resource provides functionality to create and list transfer jobs. A TransferJob resource can be an ArchiveJob instance or a RestoreJob instance. RestoreJob supports time-code based partial restore and destaging. This service replaces ArchiveJob and RestoreJob.
TransferPolicy	Allows you to manage transfer policies, including advanced functionality such as scheduling, file filters, incremental transfer, data synchronization/moving and export to tape. The transferPolicy request resource provides functionality to create, update and list policies.
TransferPolicyStats	Allows you to get transfer policy statistics, including processing stage and status. The transferPolicyStats request resource provides functionality to generate a list of statistics.
Version	Returns the Active Media Connector version.

The Web Services are used with the following standard HTTP methods to form requests:

Table 3. Implemented HTTP methods for the AMC

Method	Usage
POST	Create a job
PUT	Modify a job (priority)
GET	Retrieve information about a job
DELETE	Delete a job

Standard HTTP methods can be used with all of the services, but not all HTTP methods are publicly available for every service. Each request returns a standard HTTP code, informing the client of operation success, or error.

URIs for the AMC resources have the following structure:

`http://host:port/acapi/api-version/service-name`

Example of request URL: **`GET /acapi/1.0/archiveJob/{job_id}`**

The response will be given in JSON format. For the example above, the response body would look similar to this:

```
{
   "self":"http://server:port/acapi/1.0/archiveJob/418",
   "id":418,
   "share":"share",
   "groupId":"user/specific/logic",
   "priority":14,
   "dateCreated":"1331916712834",
   "lastUpdated":"1331916713663",
   "status":"NEW",
   "files":[
      {
         "src":"ftp://ftp.example.com/path/to/file.txt",
         "dst":"/share/and/path/to/file",
         "message":null,
         "status":"NEW"
      },
      {
         "src":"ftp://ftp.example.com/path/to/file2.txt",
         "dst":null,
         "message":null,
         "status":"NEW"
      }
   ]
}
```

For detailed descriptions and usage for each of the services provided by the AMC, including available methods, parameters, keys and request and response body examples, please see the online reference documentation, which is supplied in HTML format as part of the AMC package.

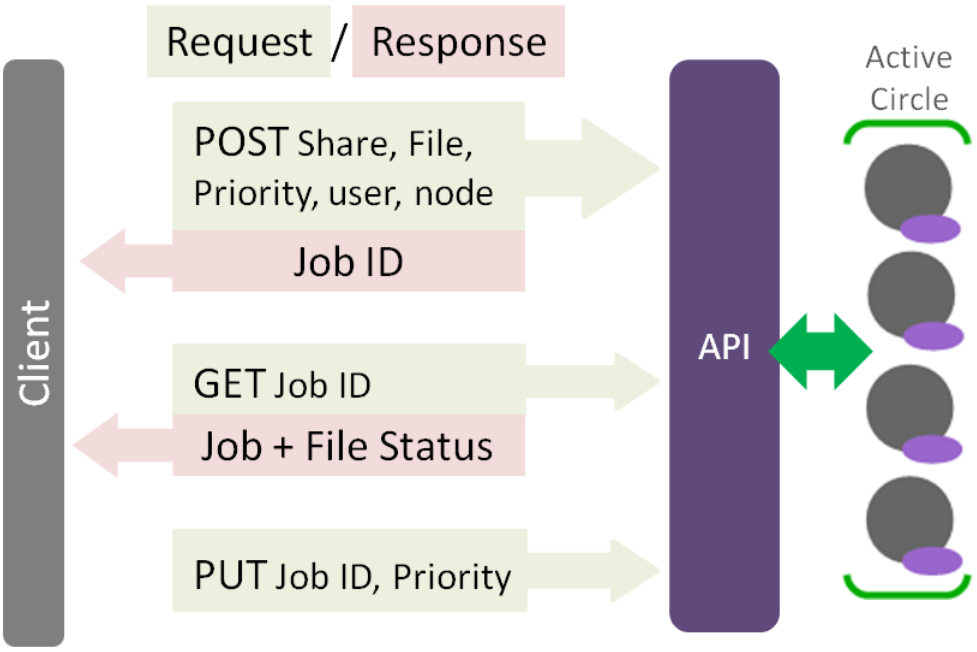
Usage Examples

This section describes examples of the usage of two AMC services in schematic fashion.

Depositing files (TransferJob)

To deposit files on an Active Circle share through the AMC, the **TransferJob** service is used by specifying the job type as "ArchiveJob". In addition to the share name, required input includes the list of files to archive. Optional fields are priority, user and node.

Figure 2. ArchiveJob Operations

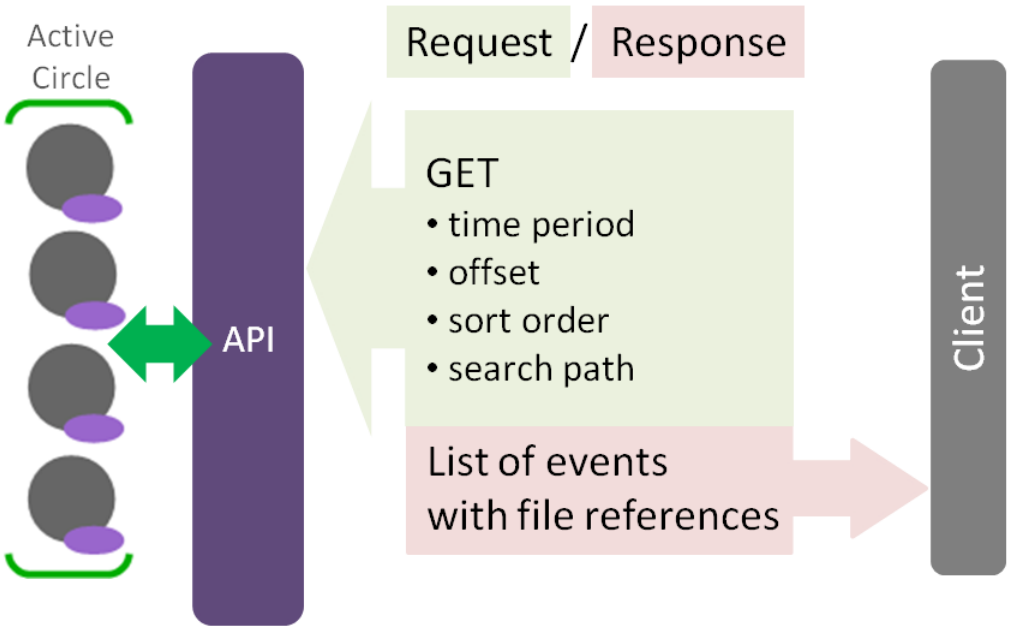


The POST method is used to request the file deposit. GET obtains the status and PUT changes the priority for the job. For ArchiveJob, the DELETE method is also available.

Querying File Events (FileAudit)

To get a list of file events in Active Circle through the AMC, the **FileAudit** service is used. Queries can be made for specific time periods, offsets, sort orders or search paths, among others.

Figure 3. FileAudit Operations



In the diagram above, the GET request lists descriptions of possible options, not the actual parameter names. For example, time can be specified both as time/date and as an index. The full list can be found in the reference documentation. For FileAudit, GET is the only public method available.

For more information

For information on how to use the Active Media Connector, please see the PDF reference documention or the online reference documentation provided with the software and available on the AMC server homepage after installation (http://*host*:*port*/acapi/).

For additional information, contact your Active Circle representative or send an e-mail to `customer-support@active-circle.com`.

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