



# **ReadCloud Integrator**

Installation Guide & User Manual

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## Introduction

ReadCloud is an Australian education technology company that provides a leading digital eLearning solution to Australian secondary schools. ReadCloud's proprietary eBook reader delivers digital content to students and staff with extensive functionality, including the ability to make commentary in, and import third party content into eBooks.

The ReadCloud Integrator ("RCI") installs as a Windows Service and provides the following automated functions:

- Local caching of ReadCloud RCS resources
- Uploading of Student Data files to ReadCloud

## Requirements

RCI has the following minimum system requirements:

- Windows 7 SP1, Windows 8, Windows 8.1, Windows 10, Windows Server 2008 R2 SP1, Windows Server 2012 or Windows Server 2012 R2
- Microsoft .NET Framework 4.6.1
- Administrator privileges
- A ReadCloud Institution API Username and Password
- At least 100mb of free storage.

## Feedback

Please tell us what you think about this service. We welcome your comments and suggestions. Send all feedback to [contact@readcloud.com](mailto:contact@readcloud.com)

## Installation Guide

The Setup package can be downloaded from:

[http://store.readcloud.com/apps/rci/RCI\\_Setup\\_1.4.exe](http://store.readcloud.com/apps/rci/RCI_Setup_1.4.exe)

Once downloaded, run the RCI\_Setup\_1.1.exe using a Windows Account that has Administrator privileges. Setup will fail unless run under an Administrator account.

If you are upgrading or re-installing RCI, Setup will automatically stop the existing service during installation.

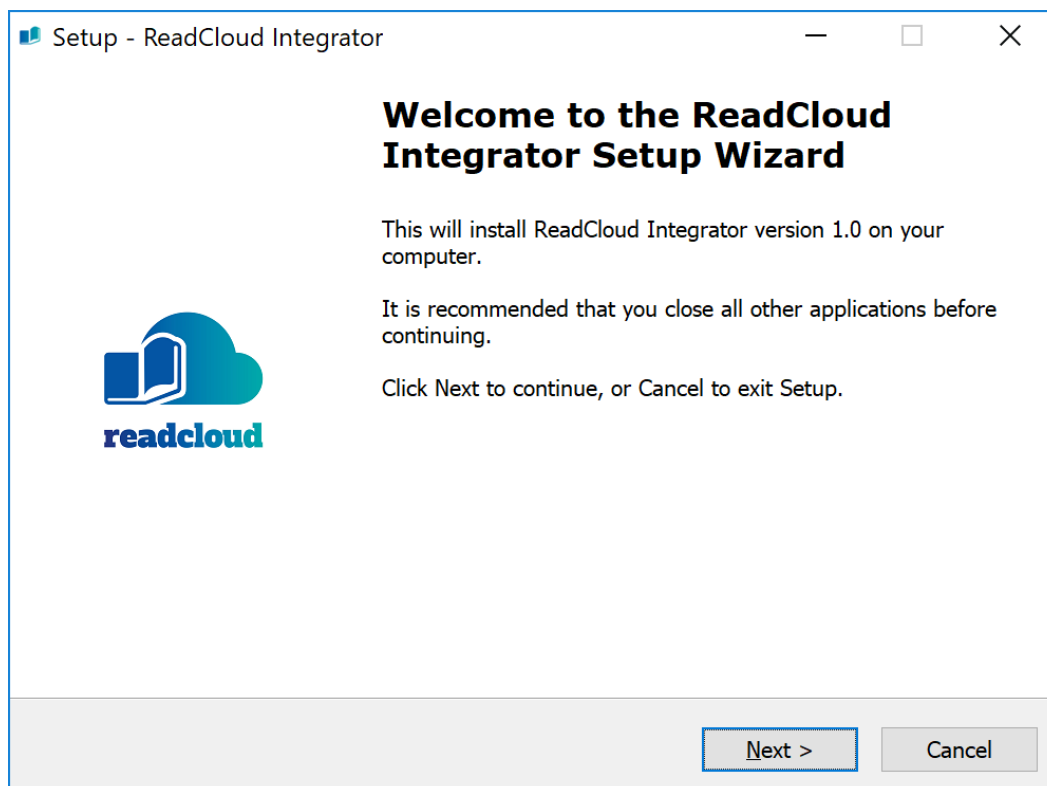
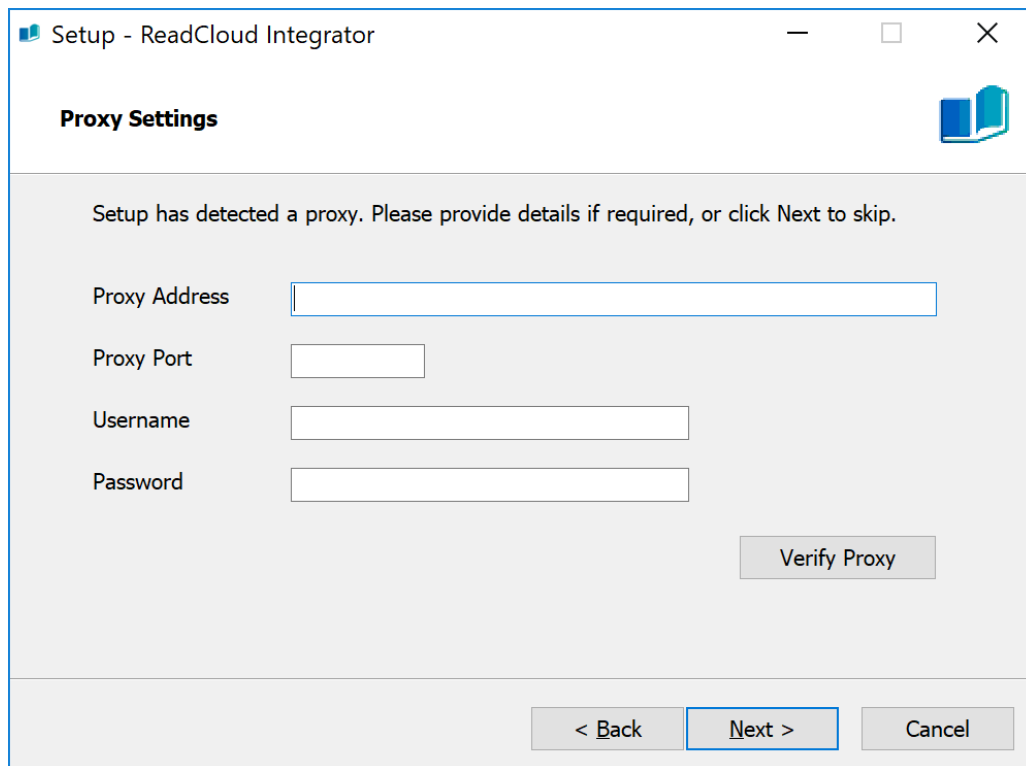


Figure 1: Welcome Screen

## Proxy Settings

Setup will first attempt to detect the presence of a web proxy. If found, the following Proxy Settings screen will be displayed.



The screenshot shows a window titled "Setup - ReadCloud Integrator" with a "Proxy Settings" header. Below the header, a message states: "Setup has detected a proxy. Please provide details if required, or click Next to skip." There are four input fields: "Proxy Address" (a long text box), "Proxy Port" (a short text box), "Username" (a text box), and "Password" (a text box). A "Verify Proxy" button is located to the right of the Password field. At the bottom of the window, there are three buttons: "< Back", "Next >" (which is highlighted with a blue border), and "Cancel".

Figure 2: Proxy Settings screen

**Proxy Address:** The hostname or IP Address of the proxy server (i.e. proxy.school.com)

**Proxy Port:** The port of the proxy server (i.e. 8080)

If the Proxy server requires authentication, the following fields should also be provided

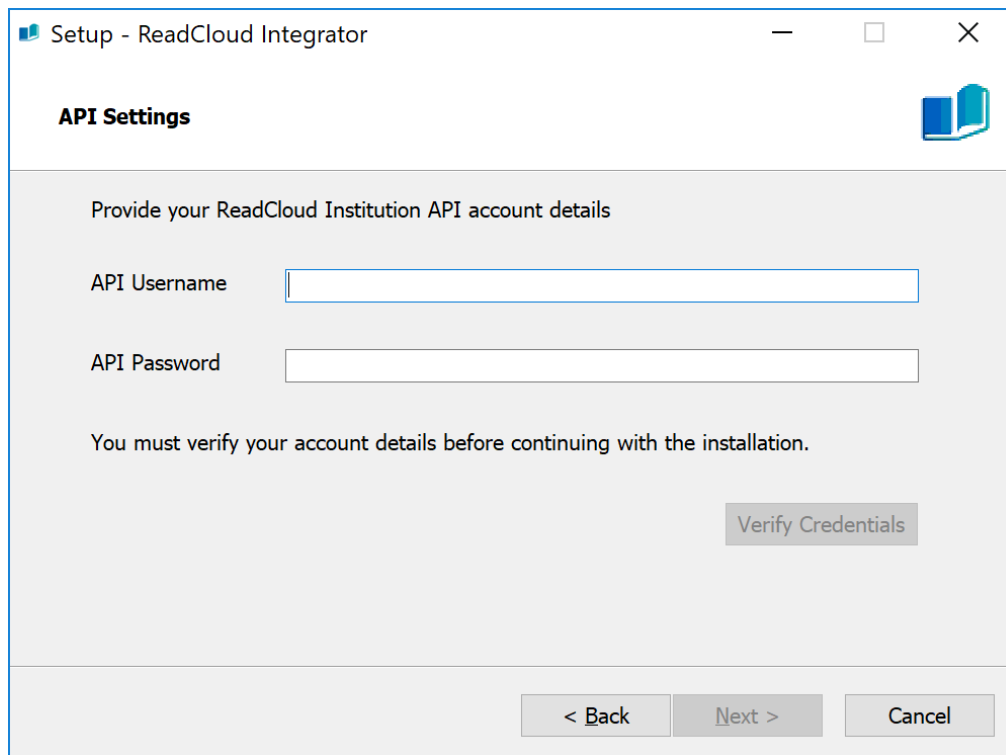
**Username:** The username required for the proxy

**Password:** The password required for the proxy.

Clicking "Verify Proxy" will perform a simple web request to ensure the proxy settings are correct.



## API Settings



Setup - ReadCloud Integrator

### API Settings

Provide your ReadCloud Institution API account details

API Username

API Password

You must verify your account details before continuing with the installation.

Verify Credentials

< Back   Next >   Cancel

Figure 3: API Settings screen

Enter your ReadCloud Institution API Username and Password you will have received from ReadCloud support. Before continuing with the installation, you must click “Verify Credentials” to ensure the provided API credentials are correct.

If the details are incorrect, you will receive the following error message:

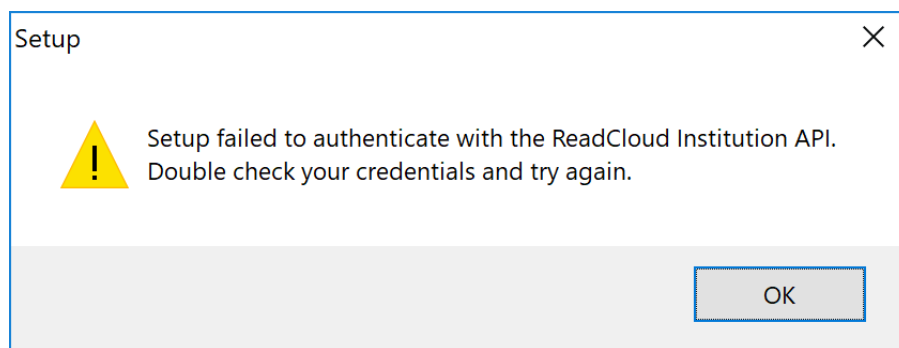


Figure 4: Verify Credentials error message

If your details are correct, you receive the following message:

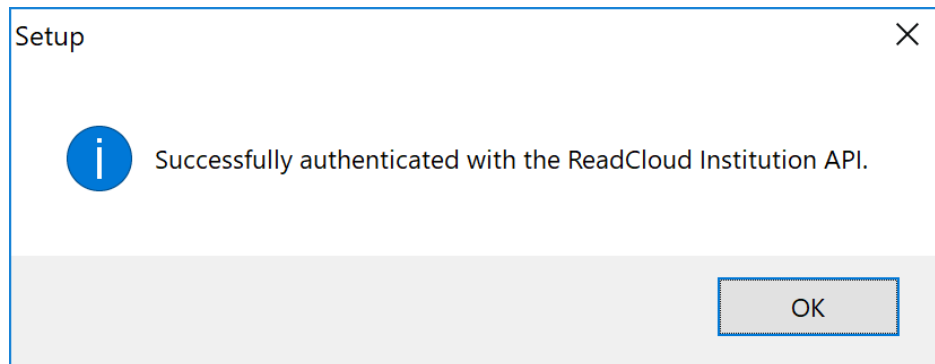


Figure 5: Verify Credentials success message

Once you have successfully verified your API Credentials, you will be able to proceed with installation.

## Destination Location

Specify the folder you would like to install RCI.

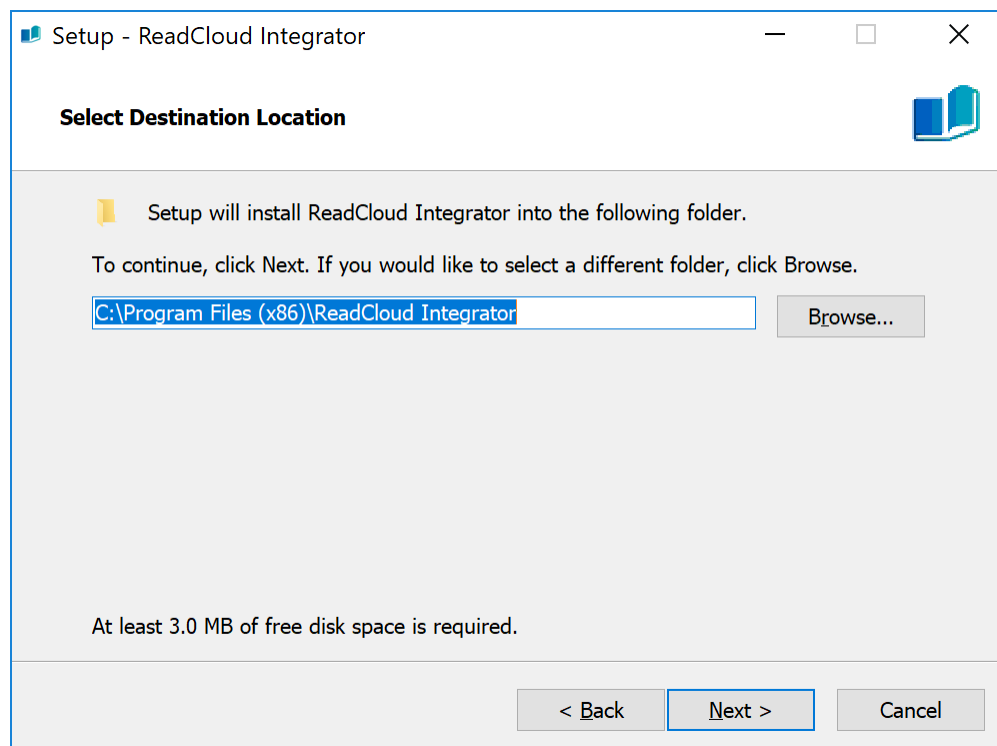


Figure 6: Select Destination Location screen

## Resource Cache

Specify the folder you would like to store ReadCloud RCS resources.

If required, you can adjust the “Polling Interval”. This controls how frequently RCI will query the ReadCloud Institution API for new or updated resources to cache. The default polling interval of 60 minutes is usually suitable.

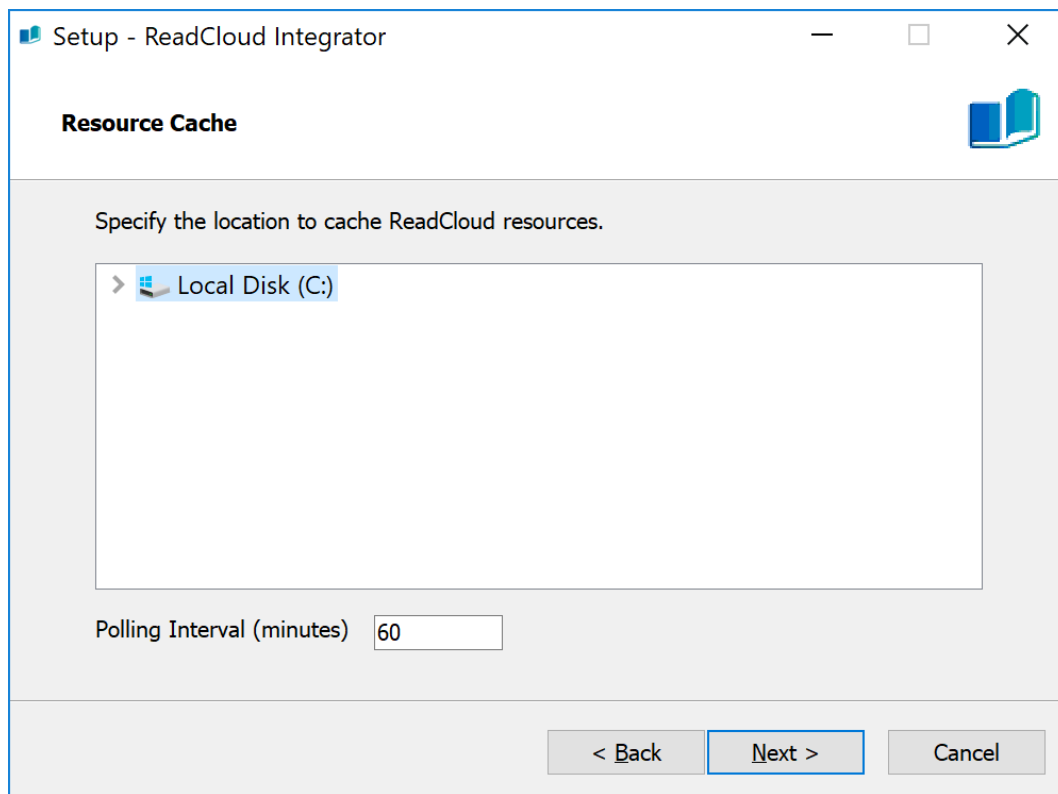


Figure 7: Select Resource Cache Location screen

Note: The Resource Caching feature of RCI may not be activated for your account. You will receive a warning message if this is the case. You will still be required to select a Resource Cache location in the event this feature is subsequently activated.

## Upload Monitor

Specify the folder you would like to monitor for new Student Data files.

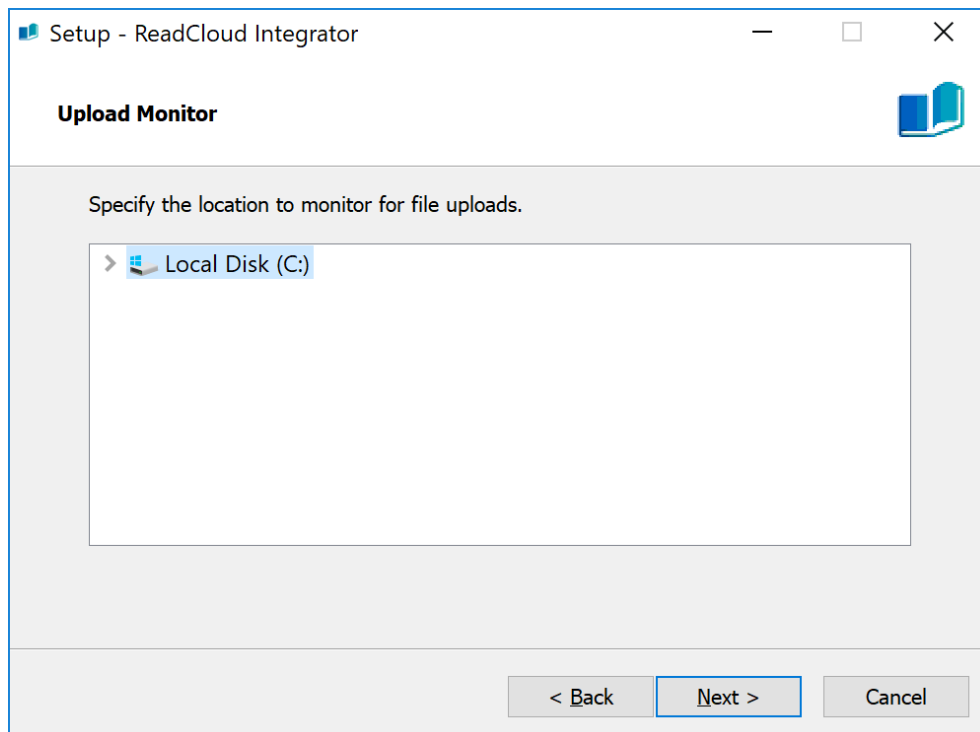


Figure 8: Upload Monitor Location screen

Note: The Upload Monitor feature of RCI may not be activated for your account. You will receive a warning message if this is the case. You will still be required to select an Upload Monitor location in the event this feature is subsequently activated.

## Preparing to Install

If Setup detects that you already have the ReadCloud Integrator service running, it will ask you to stop the service prior to continuing.

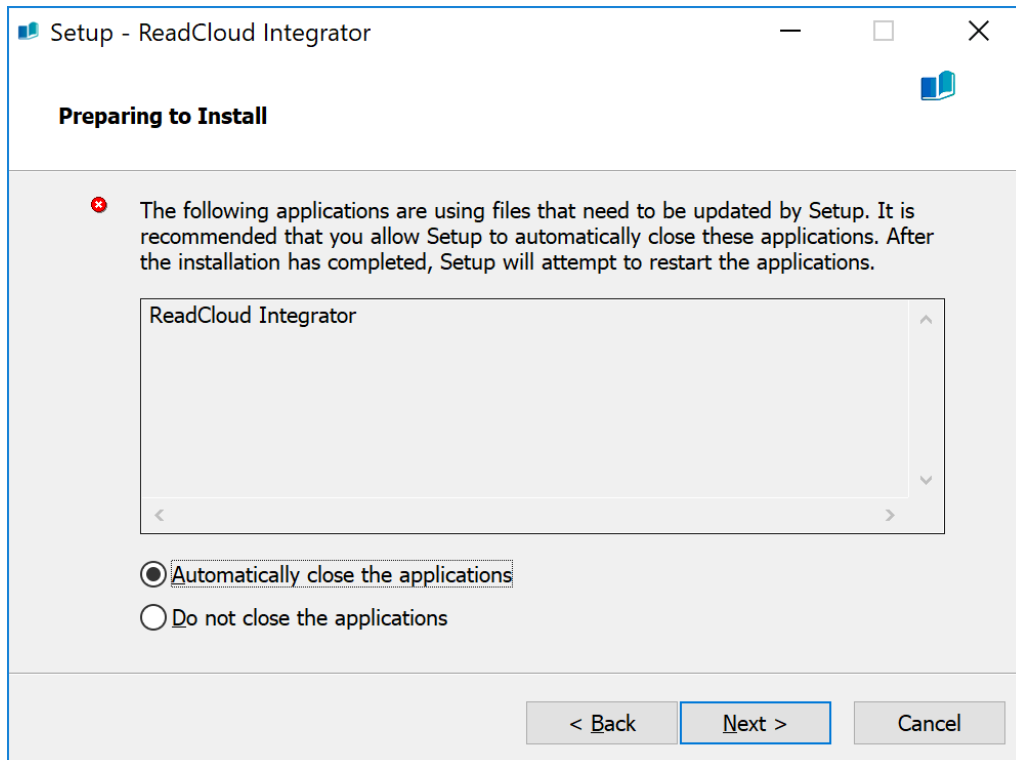


Figure 9: Preparing to Install screen

## Ready to Install

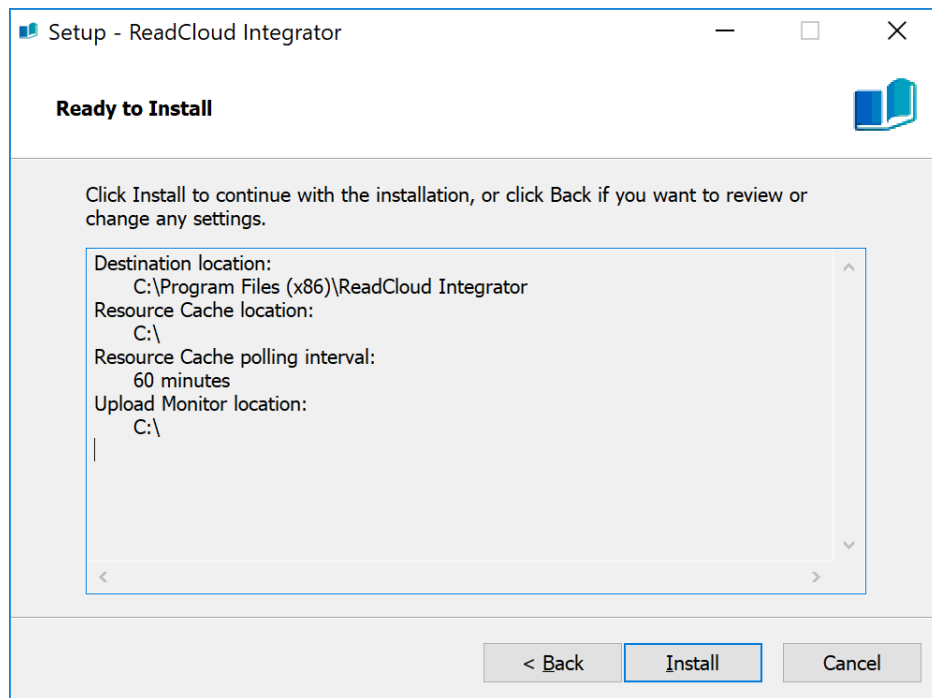


Figure 10: Upload Monitor Location screen

Confirm your installation settings. If all is OK, press “Install” to begin the installation process. You can adjust any settings by clicking “Back”.

Once Install has completed, the RCI service will be automatically started.

---

## User Guide

### Verifying RCI is running

RCI runs as a Windows Service. To verify it is running, open the Windows Services Management Console. A quick way to do this is press the Windows Key and R together, type **services.msc**, and press OK.

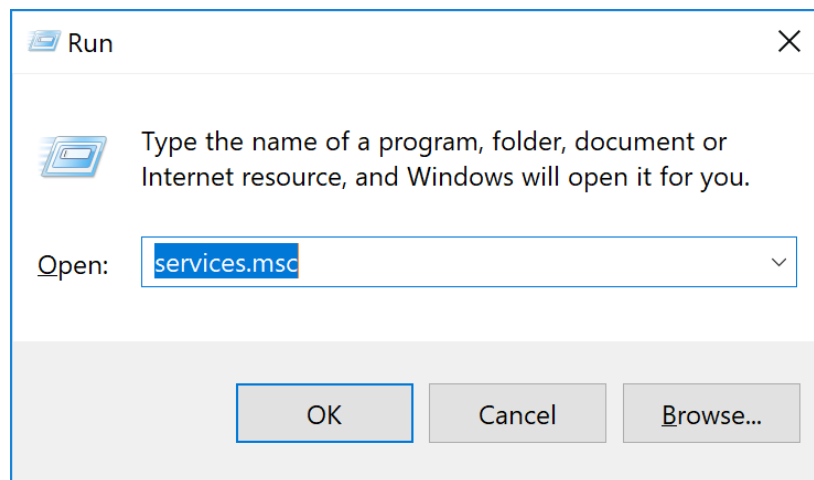


Figure 11: Running the Windows Services Management Console.

Find the “ReadCloud Integrator” service and ensure it’s status is “Running”. RCI will have been configured with a Startup Type of “Automatic” during installation. It is highly recommended that this remains unchanged to ensure uninterrupted operation.

### Event Logs

In addition to the service status, you can also check the RCI logs to verify activity. RCI outputs verbose logs to the Windows Event Log.

Everything the RCI service does is logged to the Event Log, including any errors or exceptions. These logs are usually the best place to start when troubleshooting.



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For example, to verify the Resource Cache module is running, look for an “Information” log entry similar to the following:

Event ID: 7002

Event Source: ReadCloud Integrator

Message: Started Resource Cache.

To verify the File Upload module is running, look for an “Information” log entry similar to the following:

Event ID: 7008

Event Source: ReadCloud Integrator

Message: Upload Manager started.

A full list of event codes are listed in Appendix 3.

---

## Resource Caching

*Note: The Resource Caching module must be enabled in your ReadCloud Institution API account for the following to apply.*

RCI will periodically poll the ReadCloud Institution API to see if new or updated RCS resources should be downloaded. If so, these resources will be downloaded the folder specified during installation.

A subfolder is created in the cache directory for each resource type downloaded. For example, a typical cache directory will contain the following subfolders:

- **Bookbytes** - for storing the encrypted RCS resource
- **Thumbnails** - for storing cover images of an RCS resource.

To verify the caching process, check the RCI Event Log. Log entries are created for each resource downloaded, and will look similar to the following:

```
Event ID: 7004
```

```
Event Source: ReadCloud Integrator
```

```
Message: Starting download and caching of resource  
fe249281-cfd3-419c-b53b-d025db449d06 from  
https://api.readcloud.com/api/v14/institution_rcs_resources
```

```
Event ID: 7005
```

```
Event Source: ReadCloud Integrator
```

```
Message: Finished download and caching of resource  
fe249281-cfd3-419c-b53b-d025db449d06
```

---

## Student Data File Uploads

*Note: The File Upload module must be enabled in your ReadCloud Institution API account for the following to apply.*

RCI will continuously monitor the File Upload folder specified during installation to see if new Student Data Files exist. If so, these will be uploaded to the ReadCloud API. Simply moving or copying the required files into the File Upload folder will commence the upload process.

Upon startup, RCI creates the following subfolders in the File Upload folder to manage the upload process:

- **Processing** - for storing files that are currently being uploaded
- **Processed** - for storing files that were successfully uploaded.
- **Error** - for storing any files that couldn't be uploaded along with an error report

In the event that there is an error uploading a particular file, RCI will place the file into the Error folder, along with an error report. The error report will have the filename:

`<filename>.error`

Two Student Data file formats are available: JSON, and CSV.

### JSON Student Data File format

The root JSON element of the file is as the following:

```
{  
  "institution" : string,  
  "persons" : Array of Person objects (see below) ,  
  "classes" : Array of Class objects (see below) ,  
  "memberships" : Array of Membership objects (see below)  
}
```

## Person Object schema

The person object defines a student or teacher to be imported into ReadCloud.

Field	Datatype	Required	Description
email	string	✓	Email address of the person. Must be unique. If the person belongs to multiple schools, each school must provide a different email address.
role	string	✓	Role of the person. Can be either "Student" or "Teacher"
firstName	string	✓	The first name of the person.
lastName	string	✓	The last name of the person.
yearLevel	string		The year level of the person
parentEmail	string		For student's, the email address of a parent or guardian

## Class Object schema

The class object defines a unique class that a student can attend, or a teacher can instruct.

Field	Datatype	Required	Description
code	string	✓	The class identifier. This should be unique across all a school's classes.
description	string		A description of the class

## Memberships Object schema

The membership object links students and teachers to a class.

Field	Datatype	Required	Description
email	string	✓	The email address of the student of teacher to assign to a class.
classCode	string	✓	The class identifier.

## CSV Student Data File format

The first column in of each line specifies the record type, and must be one of the following:

- Institution
- Person
- Class
- Membership

The other columns in the line depend on the record type. Optional unused columns must be empty. The format of the records is as the following:

### Institution Record

The Institution Record defines the school to which the file relates.

The row should be in the format:

Type, InstitutionCode

Column	Datatype	Required	Description
Type	string	✓	Should always be "Institution"
InstitutionCode	string	✓	The unique code of the school provided by ReadCloud.

### Person Record

The person record defines a student or teacher to be imported into ReadCloud.

The row should be in the format:

Type, Email, Role, FirstName, LastName, YearLevel, ParentEmail

Field	Datatype	Required	Description
Type	string	✓	Should always be "Person"
Email	string	✓	Email address of the person. Must be unique. If the person belongs to multiple schools, each school must provide a different email address.
Role	string	✓	Role of the person. Can be either "Student" or "Teacher"
FirstName	string	✓	The first name of the person.
LastName	string	✓	The last name of the person.
YearLevel	string		The year level of the person
ParentEmail	string		For student's, the email address of a parent or guardian

## Class Record

The class record defines a unique class that a student can attend, or a teacher can instruct.

The row should be in the format:

Type, ClassCode, Description

Field	Datatype	Required	Description
Type	string	✓	Should always be "Class"
Code	string	✓	The class identifier. This should be unique across all a school's classes.
Description	string		A description of the class

## Memberships Object schema

The membership record links students and teachers to a class.

Type, Email, ClassCode

Field	Datatype	Required	Description
Type	string	✓	Should always be "Membership"
Email	string	✓	The email address of the student of teacher to assign to a class.
ClassCode	string	✓	The class identifier.

## Updating Configuration Post-Install

All available configuration options are stored in **RCI.ini** located in the Windows directory. While these can be updated at any time if required, the recommended approach to updating configuration is to run the RCI Setup wizard again.

The following settings are available:

**baseUrl:** The default ReadCloud Institution API URL. This should rarely need changing.

**tokenUrl:** The default URL used to generate API access tokens. This should rarely need changing.

**tokenAuthorizationKey:** A unique identifier required to access the token generation URL. This should rarely need changing.

**apiUsername:** The username RCI will use when communicating with the ReadCloud Institution API.

**apiPassword:** The password RCI will use when communicating with the ReadCloud Institution API.

**proxyAddress:** The address of the proxy server used by RCI for all outbound communication.

**proxyPort:** The port of the proxy server used by RCI for all outbound communication.

**proxyUsername:** The username required to access the proxy server used by RCI for all outbound communication.

**proxyPassword:** The password required to access the proxy server used by RCI for all outbound communication.

**cacheDirectory:** The location to store cached RCS resources. Note: changing the cache directory will cause all previously cached resources to be re-downloaded.



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**pollingInterval:** How frequently (in minutes) RCI should poll the ReadCloud Institution API for updates

**resourcesScope:** The permission required to cache resources. Note: this should rarely need changing.

**uploadDirectory:** The location to monitor for Student Data files.

**importScope:** The permission required to import Student Data files. Note: this should rarely need changing.

Once the file is updated, the service should be restarted to apply the changes.

## Stopping Service

The service can be stopped using one of two methods:

### **Via the Windows Services Management Console**

Locate the “ReadCloud Integrator” in the Windows Services Management Console, Right-Click on the name of the service and select “Stop”.

### **Via the Command Line**

The service can also be stopped using command line parameters:

To stop, run `<installation directory>\ReadCloud Integrator.exe stop`

Note: Stopping the service will cancel any downloads or uploads that are currently in-process.

## Restarting the RCI Service

The service can be restarted using one of two methods:

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### Via the Windows Services Management Console

Locate the “ReadCloud Integrator” in the Windows Services Management Console, Right-Click on the name of the service and select “Restart”.

### Via the Command Line

The service can also be stopped and started using command line parameters:

To stop, run `<installation directory>\ReadCloud Integrator.exe stop`

To start, run `<installation directory>\ReadCloud Integrator.exe start`

Note: Restarting the service will cancel any downloads or uploads in progress.

### Uninstalling Service

The service can be uninstalled by running the **unins000.exe** Uninstaller program located inside the RCI installation directory. This will stop RCI if it is running, remove the service, and delete all associated files.

Note: You may have to manually remove the installation directory.

---

## Appendix 1 - Sample JSON Student Data File

```
{
  "institution" : "abcschool.com.au",
  "persons": [
    {
      "email": "john.doe@abcschool.vic.edu.au",
      "role" : "Student",
      "firstName" : "John",
      "lastName" : "Doe",
      "yearLevel" : "Year 4",
      "parentEmail" : "doe@gmail.com"
    },
    {
      "email": "alex.blogs@abcschool.vic.edu.au"
      "role" : "Student",
      "firstName" : "Alex",
      "lastName" : "Blogs",
      "parentEmail" : "blogs@gmail.com"
    },
    {
      "email" : "ivan.petrov@abcschool.vic.edu.au",
      "role" : "Teacher",
      "firstName" : "Ivan",
      "lastName" : "Petrov"
    },
  ],
}
```

```
{
  "email" : "mary.duvall@abcschool.vic.edu.au",
  "role" : "Teacher",
  "firstName" : "Mary",
  "lastName" : "Duvall"
},
"classes": [
  {
    "code" : "4ENG 1",
    "description" : "4 English 1"
  },
  {
    "code" : "4MAT 2"
  }
],
"memberships" : [
  {
    "email" : "john.doe@abcschool.vic.edu.au",
    "classCode" : "4ENG 1"
  },
  {
    "email" : "john.doe@abcschool.vic.edu.au",
    "classCode" : "4MAT 2"
  }
]
```

---

```
  },  
  {  
    "email" : "alex.blogs@abcschool.vic.edu.au",  
    "classCode" : "4ENG 1"  
  },  
  {  
    "email" : "alex.blogs@abcschool.vic.edu.au",  
    "classCode" : "4MAT 2"  
  },  
  {  
    "email" : "ivan.petrov@abcschool.vic.edu.au",  
    "classCode" : "4ENG 1"  
  },  
  {  
    "email" : "mary.duvall@abcschool.vic.edu.au",  
    "classCode" : "4MAT 2"  
  }  
]  
}
```

---

## Appendix 2 - Sample CSV Student Data File

```
Institution,"abcschool.vic.edu.au"

Person,"john.doe@abcschool.vic.edu.au","Student", "John","Doe","Year
4","doe@gmail.com"

Person,"alex.blogs@abcschool.vic.edu.au","Student","Alex","Blogs",,"blogs@gmail
.com"

Person,"ivan.petrov@abcschool.vic.edu.au","Teacher","Ivan","Petrov"

Person,"mary.duvall@abcschool.vic.edu.au","Teacher","Mary","Duvall"

Class,"4ENG 1","4 English 1"

Class,"4MAT 2","4 Maths 2"

Membership,"john.doe@abcschool.vic.edu.au","4ENG 1"

Membership,"alex.blogs@abcschool.vic.edu.au","4ENG 1"

Membership,"john.doe@abcschool.vic.edu.au","4MAT 2"

Membership,"alex.blogs@abcschool.vic.edu.au","4MAT 2"

Membership,"ivan.petrov@abcschool.vic.edu.au","4ENG 1"

Membership,"mary.duvall@abcschool.vic.edu.au","4MAT 2"
```

---

## Appendix 3 - Log Event IDs

- 0 = General Information
- 7000 = Service Started
- 7001 = Service Stopped
- 7002 = Resource Cache Module Started
- 7003 = Resource Cache Module Stopped
- 7004 = Resource Cache Download Starting
- 7005 = Resource Cache Download Completed
- 7006 = Resource Cache Download Error
- 7007 = Resource Cache No Updates Found
- 7008 = Upload Manager Module Started
- 7009 = Upload Manager Stopped
- 7010 = File Upload Starting
- 7011 = File Upload Completed
- 7012 = File Upload Error
- 7013 = New JWT Token Received
- 8001 = General Error