IBM Datacap Taskmaster Capture Version 8 Release 1

# Installing and using Taskmaster Web Services



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Note

Before using this information and the product it supports, read the information in "Notices" on page 17.

This edition applies to Version 8 Release 1 of IBM Datacap Taskmaster Capture (product number 5725-C15) and to all subsequent releases and modifications until otherwise indicated in new editions.

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# ibm.com and related resources

Product support and documentation are available from ibm.com<sup>®</sup>.

#### Support and assistance

Product support is available on the Web. Click Support from the product Web site at:

#### IBM<sup>®</sup> Datacap Taskmaster Capture

http://www.ibm.com/support/entry/portal/Software/ Enterprise\_Content\_Management/Datacap\_Taskmaster\_Capture

#### Information center

You can view the product documentation in an Eclipse-based information center on ibm.com. See the information center at http://pic.dhe.ibm.com/infocenter/ datacap/v8r1m0/index.jsp.

#### PDF publications

You can view the PDF files online using the Adobe Acrobat Reader for your operating system. If you do not have the Acrobat Reader installed, you can download it from the Adobe Web site at http://www.adobe.com.

See the following PDF publications Web site:

Product	Web site
IBM Datacap Taskmaster Capture	http://www.ibm.com/support/ docview.wss?uid=swg27035774

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# Installing and configuring Taskmaster Web Services

The Taskmaster Web Services (wTM) software component of IBM Datacap Taskmaster Capture provides you with the ability to interact with Taskmaster through a simple, platform-independent, representational state transfer (REST) application programming interface (API).

The wTM API supports HTTP GET, POST, and PUT methods that allow you to create a new batch, upload pages to the batch, set the page file name, update page files, release a batch to the next task, to retrieve any file in the batch folder (including image files), and to retrieve batch information such as batch ID and batch status.

wTM is a Microsoft Internet Information Services (IIS) based web service that can be installed on a dedicated web server, or can be installed on a web server on which other Taskmaster web components are installed.

This documentation provides the information you need to install and configure wTM in a client/server environment.

These instructions assume that you have administrator access to all computers on which IBM Datacap Taskmaster Capture software is installed and to the Windows 2008 server on which you will install wTM.

These instructions assume that access to the wTM HTTP IP address and methods is limited to only authorized computers and users by a firewall or other network device.

For information on the wTM API, see "wTM reference" on page 9.

# wTM installation steps

This section provides an overview of the steps required to install and configure the Taskmaster wTM software component in a Taskmaster 8.1 or later client/server environment.

- 1. Ensure that you have met the prerequisites detailed in the IBM Datacap Taskmaster Capture information center or IBM Datacap Taskmaster Capture Installation and Configuration Guide in the Installation and configuration prerequisites section.
- **2**. Determine which Taskmaster applications you want wTM to interact with, and what kind of interactions you want wTM to have with Taskmaster.
- **3**. Ensure that you can run all of the application tasks manually before you configure wTM to run them, as this makes troubleshooting wTM easier.
- 4. Create or ensure that a domain/Windows account exists for wTM.
- 5. Depending on whether Taskmaster is using Taskmaster authentication or an external authentication system, set up the relevant users, groups, and stations in the Taskmaster Application Manager on the Custom values tab and in your Taskmaster applications.
- **6**. Set up permissions for wTM on the Datacap shared folder on the Taskmaster Server and the appropriate application folders.

- 7. Install and configure wTM and the wTM Application Pool on the WebServer, import encryption keys, and set the location of the datacap.xml file.
- 8. Create a program that uses the API to interact with Taskmaster.

# Creating or ensuring that an account exists for wTM About this task

Create or ensure a domain/Windows account exists for wTM. Taskmaster does not require that a unique Windows account be set up for wTM. wTM can use any Windows account provided that account can be set up with the appropriate sharing and security permissions. When wTM is installed on the same WebServer as Taskmaster Web or RV2, wTM can use the same Windows account or a different one.

# Authenticating wTM

#### About this task

Taskmaster Web Services (wTM) assumes that access to the wTM HTTP IP address and methods is limited to authorized computers and users by a firewall or other network device. Steps in this installation and configuration material identify the minimum sharing and security permissions needed for wTM to function.

wTM uses settings in the C:\Datacap\wTM\web.config file to determine the names of the keys that are stored in the Taskmaster Application Manager from which to retrieve the Taskmaster user, password, and station. The web.config file contains these lines that identify the names of the keys:

Depending on the authentication system in use, follow the instructions in the IBM Datacap Taskmaster Capture information center or IBM Datacap Taskmaster Capture Installation and Configuration Guide in the Configuring authentication for Taskmaster section to set up the wTMUser, wTMPassword, and wTMStation name/value pairs in Taskmaster Application Manager and to set up the wTM user, password, and station in your Taskmaster applications.

# Setting up sharing permissions for wTM on the Datacap folder About this task

You must set up the appropriate sharing permissions for the wTM account on the shared Datacap folder. In the examples used in this material, the shared folder is the C:\Datacap folder on the Taskmaster Server ("Server"). These instructions apply when the Server's operating system is Windows 2008. Note that other accounts were already granted sharing permissions during the initial installation and configuration of the Taskmaster Server.

# Procedure

- 1. On the Server, start Windows Explorer, navigate to and right-click the c:\Datacap folder and select **Properties**.
- **2**. Click the **Sharing** tab to display it. The folder should already be shared with the **Share** name of Datacap.
- **3**. Click **Advanced Sharing**. When User Account Control (UAC) is on, the User Account Control window is displayed. Click **Yes**.
- 4. Click **Permissions**. Add or ensure that the domain/Windows User ID of wTM is set to allow **Full Control**.

# Setting up security for wTM on the Datacap folder

## About this task

You must set up the appropriate security permissions for the wTM account on the shared Datacap folder. In the examples used in this material, the shared folder is the C:\Datacap folder on the Taskmaster Server ("Server"). These instructions apply when the operating system is Windows 2008. Note that other accounts were already granted security permissions during the initial installation and configuration of the Taskmaster Server.

#### Procedure

- 1. On the Server, start Windows Explorer, navigate to and right-click the Datacap folder and select **Properties**.
- 2. Click the **Security** tab to display it. Then, click **Edit**. When User Account Control (UAC) is on, the User Account Control window is displayed. Click **Yes**.
- **3.** Add or ensure that the domain/Windows User IDs of the wTM account is set to allow **Read**.

# Setting up security for wTM on the Datacap\Application folder

## About this task

You must set up the appropriate security permissions for the wTM account on the folder or folders containing the applications with which wTM will be interacting (Datacap\Application). In the examples used in this material, the application files are found on the Taskmaster Server ("Server") in the shared C:\Datacap folder. These instructions apply when the operating system is Windows 2008. If you are setting up wTM to run tasks from more than one application, repeat these instructions for each Datacap\Application folder. Note that other accounts were already granted security permissions during the initial installation and configuration of the Taskmaster Server.

#### Procedure

- 1. On the Server, start Windows Explorer, navigate to and right-click the c:\Datacap\Application folder and select **Properties**.
- 2. Click the **Security** tab, then click **Edit**.
- **3**. Add or ensure that the domain/Windows User ID of the wTM account is set to allow **Read**.

# Ensuring the required IIS components are installed

#### About this task

This topic identifies the set of Microsoft Internet Information Services (IIS) Web Server Role Services required by the various Taskmaster web server components (Taskmaster Web, RV2, Fingerprint Service, or Taskmaster Web Services). This procedure provides instructions on how to ensure that the appropriate components have been installed in Microsoft Internet Information Services (IIS) when the WebServer's operating system is Windows 2008.

#### Procedure

- From the WebServer's Windows Start menu, select Administrative Tools > Server Manager.
- 2. In the Server Manager hierarchy pane, expand **Roles**, and then select **Web Server (IIS)**.
- 3. In the Web Server (IIS) pane, expand **Role Services**, and under **Common HTTP Features**, ensure that **Static Content**, **Default Document**, **Directory Browsing**, and **HTTP Errors** are installed.

**Important:** If you are installing wTM, do not install the **WebDAV Publishing** role service, as it prevents the wTM PUT method from functioning.

- 4. In the **Role Services** pane, under **Application Development**, ensure that the **ASP.NET**, **.NET Extensibility**, **ASP**, **ISAPI Extensions** and **ISAPI Filters** are installed.
- 5. In the **Role Services** pane, under **Health and Diagnostics**, ensure that **HTTP Logging** and **Request Monitor** are installed.
- 6. In the **Role Services** pane, under **Security**, ensure that **Request Filtering** is installed.
- 7. In the **Role Services** pane, under **Performance**, ensure that **Static Content Compression** is installed.
- 8. In the **Role Services** pane, under **Management Tools**, ensure that **IIS Management Console** is installed.
- 9. Close the Server Manager window.

# Installing wTM on the WebServer

## About this task

This procedure provides instructions on how to run the IBM Datacap Taskmaster Capture InstallShield Wizard on a server (referred to as "WebServer") to install the Taskmaster wTM software component.

These instructions apply to servers running on Windows 2008.

#### Procedure

1. Make the installation package available on your network, or insert the IBM Datacap Taskmaster Capture CD in the WebServer's CD/DVD drive. If the installation process does not start automatically, or if the package is on the network, open Windows Explorer, navigate to and double-click the Setup.exe. When User Account Control (UAC) is on, the User Account Control window opens. Click Yes.

- 2. Select the appropriate language, then click **OK**. The language that you select determines the language that is displayed by the InstallShield Wizard during the installation process.
- **3**. When additional, redistributable software is required, the InstallShield Wizard displays a list of the items to be installed. Click **Install**.
- 4. Click Next.
- 5. Accept the license agreement. Then, click Next.
- 6. Select the **Custom** option. Then, click **Next**.
- 7. Exclude all components from the installation process except wTM.
- 8. Click Next.
- 9. Click Install.
- 10. Click Finish.

# Importing encryption keys to IBM Datacap Taskmaster Capture computers

In a client/server configuration, you must import security encryption keys to the computer where you are installing and configuring each IBM Datacap Taskmaster Capture component. This requirement secures any passwords that are passed over the network between Taskmaster Capture servers and clients.

# Before you begin

You must generate the encryption keys in the keystore on a server on which the Taskmaster Server software component was installed, and export the new keys to a key transport file.

## Procedure

To import encryption keys from the Taskmaster Server to the computer on which you are installing the new component:

- 1. Find the dc\_KTF.xml key transport file in the C:\Datacap\Taskmaster folder on the Taskmaster Server where you generated and exported the encryption keys.
- Copy the dc\_KTF.xml key transport file to the C:\Datacap\Taskmaster folder on the computer where you installed the new component. The encryption keys will be applied automatically to the keystore the next time you start or restart the Taskmaster component.

# Setting up the wTM web site and application pool advanced settings About this task

This procedure provides instructions on how to set up the Taskmaster wTM web site on Microsoft Internet Information Services (IIS).

#### Procedure

- 1. From the WebServer's Windows Start menu, select Administrative Tools > Internet Information Services (IIS) Manager.
- 2. In the Connections pane, expand the computer, right-click **Sites** and select **Add Web Site**.
  - a. Set Site name to wTM. The Application pool is automatically set to wTM.

- b. Set the **Physical path** by entering or browsing to the installation folder for wTM. The default location is C:\Datacap\wTM.
- c. Select the **IP address** of the WebServer and assign a unique **Port number**. When Taskmaster Web and wTM installed on the same WebServer, Taskmaster Web will not work unless wTM is assigned a different port number.
- 3. Click OK to close the Add Web Site dialog.
- 4. In the **Connections** pane, select **Application Pools**.
- 5. In the Application Pools pane, select the wTM application pool, then in the Actions pane, in the Edit Application Pool section, click **Advanced Settings**.
  - a. Ensure that the **.NET version** is set to v4.0.
  - b. Ensure that Enable 32-Bit Applications is set to True.
  - c. Ensure that Managed Pipeline Mode is set to Integrated.
  - d. Ensure that **Start Automatically** is set to True.
- 6. In the Process Model section, click the browse button to the right of Identity.
- 7. In the Application Pool Identity window, select Custom account and click Set.
- 8. In the Set Credentials window, enter the wTM domain/Windows account information in the format: accountname@domainname, enter the account's password twice, then click **OK**.
- 9. In the Process Model section, set Load User Profile to True, then click OK.
- In the Connections pane, select the wTM site, then, in the Actions pane, under Manage Web Site, click Restart.
- 11. Confirm all of the following are started: Web Server, Application Pool, and Default Web Site.

# Enabling ISAPI extensions for wTM

#### About this task

This procedure provides instructions on how to enable ISAPI extensions for all verbs and for execution on the WebServer.

#### Procedure

- 1. From the WebServer's Windows Start menu, select Administrative Tools > Internet Information Services (IIS) Manager.
- 2. In the Connections pane, expand the computer, select the wTM web site, and in the wTM Home pane, double-click **Handler Mappings**.
- 3. Scroll down, select svc-ISAPI-4.0\_32bit, and ensure it is enabled.
- 4. In the Actions pane, click **Edit Feature Permissions**, select **Read**, **Script**, and **Execute**, then click **OK**.
- 5. In the Actions pane, click **Edit**, and on the Edit Script Map dialog, click **Request Restrictions**.
- 6. On the Request Restrictions dialog, click the **Verbs** tab, select **All verbs**, click **OK**, then click **Yes**.

# Validating the wTM installation by viewing the wTM help pages About this task

You can validate your installation by viewing the wTM help pages.

## Procedure

- 1. Open Internet Explorer and enter the help page URL:http://<WebServerName or IP address>:<port number>/ServicewTM.svc/help.
- 2. Click on one of the links in the **Method** column to display detailed help about the REST request.

# Setting the location of the Datacap.xml file

## About this task

This procedure provides instructions on how to define the location of the Taskmaster application settings using the Taskmaster Application Manager. In the examples used in this material, the datacap.xml file containing the application settings is found on the Taskmaster Server ("Server") in the C:\Datacap folder.

#### Procedure

- From the Windows Start menu, select All Programs > Datacap > Administrator > Taskmaster > Taskmaster Application Manager. When User Account Control (UAC) is on, the User Account Control window opens. Click Yes.
- 2. Click the Service tab to display it.
- 3. Change or ensure that the path reflects the correct location of the datacap.xml file, for example: \\Server\Datacap\datacap.xml.
- 4. Close the Taskmaster Application Manager.

# wTM reference

This section contains information on the IBM Datacap Taskmaster Capture representational state transfer (REST) application programming interface (API) request messages that are supported by Taskmaster Web Services.

#### wTM use case scenarios

One way to use wTM would be to run it from a multifunction device that runs on or can interface with an operating system like Windows CE. For example, starting to scan pages on a network scanner could trigger a sequence of requests that include a CreateBatch request, a series of UploadFile requests, a series of GetBatchAttributes requests to monitor processing, and then a ReleaseBatch request when all pages have been uploaded. Subsequent processing by a Taskmaster application could be monitored to ensure all pages are ultimately committed to an IBM repository.

Another way to use wTM would be to send images from an outside system to Taskmaster so that the data on the images can be recognized, captured, validated and then return some or all of the data to the outside system. This process would involve invoking wTM to create a Taskmaster batch, to upload the images in the batch, and then release the batch for Taskmaster processing through page identification, recognition, verification and export processing. Custom actions can be written so that the Taskmaster application notifies the wTM client (caller) when a batch is completed. The wTM client can then retrieve the capture results and execute other processes to send the data to the outside system.

To send a batch that has completed scan, page ID, recognition, and prevalidation tasks (current page file is profiler.xml) to a custom (non-Taskmaster) verify task:

- 1. Send GrabBatch request
- 2. Send GetBatchAttributes request
- 3. Send GetPageFile request
- 4. Parse the returned page file for file names
- 5. Send GetFile request to obtain image and data files
- 6. Send SetFile to update the data files (tm000001.xml)
- 7. Send SetPageFileName request to change page file name to verify.xml
- 8. Send ReleaseBatch request

To check if the batch is done:

- 1. Send GetBatchAttributes request
- 2. Parse the returned attributes for status, and when status = job done
- 3. Send GetPageFile request
- 4. Send GetFile request to obtain data files
- 5. Extract the data you need and send it to the outside system

# wTM CreateBatch

## **Request header**

The Taskmaster wTM CreateBatch request creates a new batch record in the application's Engine database that is uniquely identified by a batch queue ID. For the CreateBatch request to be successful, the first task in the job in the application must be a batch creation task.

HTTP Method POST

URL:

http://{IP Address}:{Port}/ServicewTM.svc/Queue/CreateBatch

## **Request body**

The request body can have the following attributes:

Table 1	Request	body	attributes
---------	---------	------	------------

Attribute name	Description of value
application	The name of the application is required and must be the first attribute. The value must be the name of a Taskmaster application found in the datacap.xml file.
job	The name of the job is required. The value must be the name of a job found in a Taskmaster application workflow and a batch creation task must be the first task in the job.
batchFolder	The name of the batch folder to be created is optional. When this variable is not included, Taskmaster assigns the name of the batch folder.
pageFile	The name of the page file to be created is optional. When this variable is not included, Taskmaster assigns the name of the page file. Do not include a pageFile attribute with a blank value.
	The pageFile value can be one of the following:
	• The string to use as the file name
	• A file attribute that specifies an existing page file on disk
	• The XML content of the page file
file	The name of an existing page file on disk is optional. When you include this attribute, embed it as a child node of pageFile and provide the full path, file name and file extension. When you use this variable, you must also include the batchFolder variable.

## **Examples**

The following examples show three different CreateBatch requests.

```
<createBatchAttributes>
 <application>FastApp</application>
 <batchFolder></batchFolder>
 <job>Main Job</job>
</createBatchAttributes>
<createBatchAttributes>
  <application>FastApp</application>
 <batchFolder>C:\Datacap\Scan\00001</batchFolder>
 <job>Main Job</job>
<pageFile><file>scan.xml</file></pageFile>
</createBatchAttributes>
<createBatchAttributes>
 <application>FastApp</application>
 <batchFolder></batchFolder>
 <job>Main Job</job>
<pageFile>
<B id="20120820.000000">
 <V n="STATUS">0</V>
 <V n="TYPE">FastDoc</V>
 <V n="customVar">customVal</V>
</B></pageFile>
</createBatchAttributes>
```

# wTM response

The wTM response to CreateBatch can be one of the following:

- 201 Created
- 400 Bad Request
- 500 Internal Error

A successful response also returns the following batch attributes:

Table 2.	Response	body	attributes
----------	----------	------	------------

Attribute name	Description of value
batchID	The batch ID assigned to the batch by Taskmaster.
job	The name of the job.
queueID	The unique identifier assigned to the batch by Taskmaster.
status	The status of the batch.
task	The name of the task.

# wTM GetBatchAttributes

## **Request header**

The Taskmaster wTM GetBatchAttributes request queries Taskmaster for information associated with a specific application name and queue ID.

HTTP Method GET

URL:

http://{IP Address}:{Port}/ServicewTM.svc/Queue/GetBatchAttributes/{application}/
{queueId}

# **Request body**

The request body is empty.

#### wTM response

The wTM response to GetBatchAttributes can be one of the following:

- 200 OK
- 500 Internal Error

The response returns the following batch attributes:

Table 3. Response body attributes.

Attribute name	Description of value
batchID	The batch ID assigned to the batch by Taskmaster.
job	The name of the job.
queueID	The unique identifier assigned to the batch by Taskmaster.
status	The status of the batch.
task	The name of the task.

# wTM GetBatchld

#### **Request header**

The Taskmaster wTM GetBatchId request queries Taskmaster for the batch ID associated with a specific application name and queue ID.

HTTP Method GET

URL:

http://{IP Address}:{Port}/ServicewTM.svc/Queue/GetBatchId/{application}/{queueId}

#### **Request body**

The request body is empty.

#### wTM response

The wTM response to GetBatchId can be one of the following:

- 200 OK
- 500 Internal Error

The response returns the batch ID.

# wTM GetFile

#### **Request header**

The Taskmaster wTM GetFile request uses the application name, queue ID, file name and file extension to ask Taskmaster to return that specific file.

HTTP Method GET

URL:

```
http://{IP Address}:{Port}/ServicewTM.svc/Queue/GetFile/{application}/
{queueId}/{fileName}/{fileExtension}
```

## **Request body**

The request body is empty.

#### wTM response

The wTM response to GetFile can be one of the following:

- 200 OK
- 500 Internal Error

The response returns the file.

# wTM GetPageFile

#### **Request header**

The Taskmaster wTM GetPageFile request uses the application name and queue ID to ask Taskmaster to return the contents of the current page file associated with the batch.

HTTP Method GET

URL:

http://{IP Address}:{Port}/ServicewTM.svc/Queue/GetPageFile/{application}/{queueId}

# **Request body**

The request body is empty.

#### wTM response

The wTM response to GetPageFile can be one of the following:

- 200 OK
- 500 Internal Error

The response returns the XML contents of the current page file.

# wTM GetPageFileName

#### **Request header**

The Taskmaster wTM GetPageFileName request uses the application name and queue ID to ask Taskmaster to return the name of the current page file associated with the batch.

HTTP Method GET

URL:

http://{IP Address}:{Port}/ServicewTM.svc/Queue/GetPageFileName/{application}/
{queueId}

#### **Request body**

The request body is empty.

#### wTM response

The wTM response to GetPageFileName can be one of the following:

- 200 OK
- 500 Internal Error

The response returns the current page file name.

# wTM GrabBatch

#### **Request header**

The Taskmaster wTM GrabBatch request uses the application name and queue ID to ask Taskmaster to run the batch. The request sets the batch status to running for the pending task.

HTTP Method PUT

URL:

http://{IP Address}:{Port}/ServicewTM.svc/Queue/GrabBatch/{application}/{queueId}

#### Request body

The request body is empty.

#### wTM response

The wTM response to GrabBatch can be one of the following:

- 200 OK
- 500 Internal Error

# wTM ReleaseBatch

#### **Request header**

The Taskmaster wTM ReleaseBatch request uses the application, queue ID and a status to ask Taskmaster to complete the processing of the current task and assign a status to the batch that is associated with the current task.

This request releases the batch so that Taskmaster can advance the batch as pending for the next task in the workflow.

#### HTTP Method PUT

URL:

```
http://{IP Address}:{Port}/ServicewTM.svc/Queue/ReleaseBatch/{application}/
{queueId}/{status}
```

The valid values for status are:

- hold
- finished
- cancelled
- aborted
- offline

## **Request body**

The request body is empty.

#### wTM response

The wTM response to ReleaseBatch can be one of the following:

- 200 OK
- 500 Internal Error

# wTM SetFile

## **Request header**

The Taskmaster wTM SetFile request uses the application name, queue ID, filename and file extension to upload a file to an existing batch folder. A page object is not added to the page file.

HTTP Method POST

URL:

```
http://{IP Address}:{Port}/ServicewTM.svc/Queue/SetFile/{application}/
{queueId}/{fileName}/{fileExtension}
```

## **Request body**

The request body contains the file that is to be uploaded.

#### wTM response

The wTM response to SetFile can be one of the following:

- 201 Created
- 400 Bad Request
- 500 Internal Error

# wTM SetPageFileName

#### **Request header**

The Taskmaster wTM SetPageFileName request tells Taskmaster to assign this name to the page file for the batch.

HTTP Method PUT

URL:

http://{IP Address}:{Port}/ServicewTM.svc/Queue/SetPageFileName/{application}/
{queueId}/{fileName}/{fileExtension}

#### **Request body**

The request body is empty.

#### wTM response

The wTM response to SetPageFileName can be one of the following:

- 200 OK
- 500 Internal Error

#### wTM UploadFile

#### **Request header**

The UploadFile request uses the application name and queue ID to upload a file. A page object is added to the page file.

HTTP Method POST

URL:

http://{IP Address}:{Port}/ServicewTM.svc/Queue/UploadFile/{application}/{queueId}

#### **Request body**

The request body contains a multi-part/formdata message including the file or files to be uploaded.

#### wTM response

The wTM response to UploadFile can be one of the following:

- 201 Created
- 400 Bad Request
- 500 Internal Error

The response returns the original file name (originalFileName) and the page ID (pageId).

A sequentially numbered page object is created in the page file. The task settings contain the page file name that is used, page TYPE is always set to 0ther, and STATUS is always set to 49. The page object contains this information:

```
<P id="tm000001">
        <V n="TYPE">0ther</V>
        <V n="STATUS">49</V>
        <V n="IMAGEFILE">tm000001.tif</V>
</P>
```

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