

# Add The Migrate Module To Your Toolbox



Pieter-Jan Drouillon



DRUPALCAMP  
GHENT 2014

# OVERVIEW

# OVERVIEW

**Introduction**

**ETL**

**Migrate module**

**Various topics**

**Overview**

DRUPALCAMP  
GHENT 2014

# INTRODUCTION

# USE CASE

**Frequently Asked Question Site**

**Mid 90's**

**Custom application on LAMP**

**No longer maintainable**

# WHY ABOUT FEEDS?

**Good alternative**

**For “easier” migrations**

# WHO AM I ?

**KU LEUVEN**



FACULTEIT  
INGENIEURSWETENSCHAPPEN

**IT Expert & Tutor**

# WHO AM I ?

PROVIDEOR

**Supply Chain Optimization  
Data Scientist**



DRUPALCAMP  
GHENT 2014

ETL

# ETL PROCESS

**E xtract**

**T ransform**

**L oad**

DRUPALCAMP  
GHENT 2014

**MIGRATE**

**MODULE**

# USE CASE

**Students ask questions**

**Didactical team answers**

**Search**

**TOC**

# BROWSE



## Vakvragentrommel

De Vragentrommel is een toepassing ontwikkeld door het Monitoraat Ingenieurswetenschappen die studenten de kans geeft via elektronische weg vragen te stellen aan hun proffen, monitoren en/of assistenten. Je kan ook de antwoorden op reeds gestelde vragen bekijken, doorzoeken, ...

- [1BIR-Algemene Natuurkunde](#)
- [1BIR-Analyse](#)
- [1BIR-Electrische Netwerken](#)
- [1BIR-Elektriciteit en magnetisme](#)
- [1BIR-Materiaalkunde](#)
- [1BIR-Mechanica, deel 1](#)
- [1BIR-Thermodynamica](#)
- [1BIR-Toegepaste algebra](#)
- [1BIRA-Lineaire algebra](#)
- [1BIRA-Lineaire algebra en Wiskundige analyse](#)
- [1BIRA-Ontwerpen](#)
- [1BIRA-Wiskundige Analyse](#)
- [2BIR-Numerieke wiskunde \(2e Bach.Ir.\)](#)
- [Numerieke wiskunde \(ind.ing. & AOI\)](#)
- [Numerieke wiskunde \(wisk/inf\)](#)

[Naar de vragentrommel](#)

# BROWSE

## 1. Zoeken in de vragen

Geef uw trefwoord(en):

Maximum aantal vragen als resultaat van de zoekactie:

of bekijk de vragentrommel van [2010](#), [2009](#).

---

## 2. Reeds gestelde vragen

- [Vloeistoffen](#) ( 2 vragen, 2 antwoorden)
- [Trillingen](#) ( 1 vraag, 1 antwoord)
- [Golfbeweging](#) ( 2 vragen, 2 antwoorden)
- [Geluid](#) ( 1 vraag, 1 antwoord)
- [Warmte, warmtetransport en warmtevergelijking](#) ( 1 vraag, 1 antwoord)
- [Lading en elektrisch veld](#) ( 4 vragen, 4 antwoorden)
- [Elektrische potentiaal](#) ( 1 vraag, 1 antwoord)
- [Elektrische stroom](#) ( 4 vragen, 4 antwoorden)
- [Magnetisme](#) ( 1 vraag, 1 antwoord)
- [Elektromagnetische inductie en wet van Faraday](#) ( 1 vraag, 1 antwoord)
- [Elektromagnetische Golven](#) ( 2 vragen, 2 antwoorden)
- [Licht: geometrische optica](#) ( 3 vragen, 3 antwoorden)
- [Fysische optica](#) ( 2 vragen, 2 antwoorden)

# BROWSE

## Vloeistoffen

[Terug naar het overzicht van de onderdelen voor IBIR-Algemene Natuurkunde](#)

## Titels van de vragen

[Vraag 179: Water en ijs smelten](#)

[Vraag 176: Oplossingen oefeningen](#)

## Alle vragen (en antwoorden)

---

### Vraag nr. 179 : Water en ijs smelten

r0298342 Saturday 17 March 2012 - 12.11

Als je in een glas ijsblokjes doet en het glas vult tot de rand, zal het volume dan veranderen bij het smelten van het ijs?

alvast bedankt

#### Antwoord :

Als je het glas vult tot de rand, zullen de ijsblokjes boven de rand uitsteken, aangezien de dichtheid van het ijs kleiner is (wet van archimedes). Als het ijs smelt zal het gesmolten ijs hetzelfde volume innemen als "de verplaatste vloeistof" uit de wet van archimedes.

Het totale volume zal dus veranderen, maar er zal geen water over de rand stromen.

Riet

---

### Vraag nr. 176 : Oplossingen oefeningen

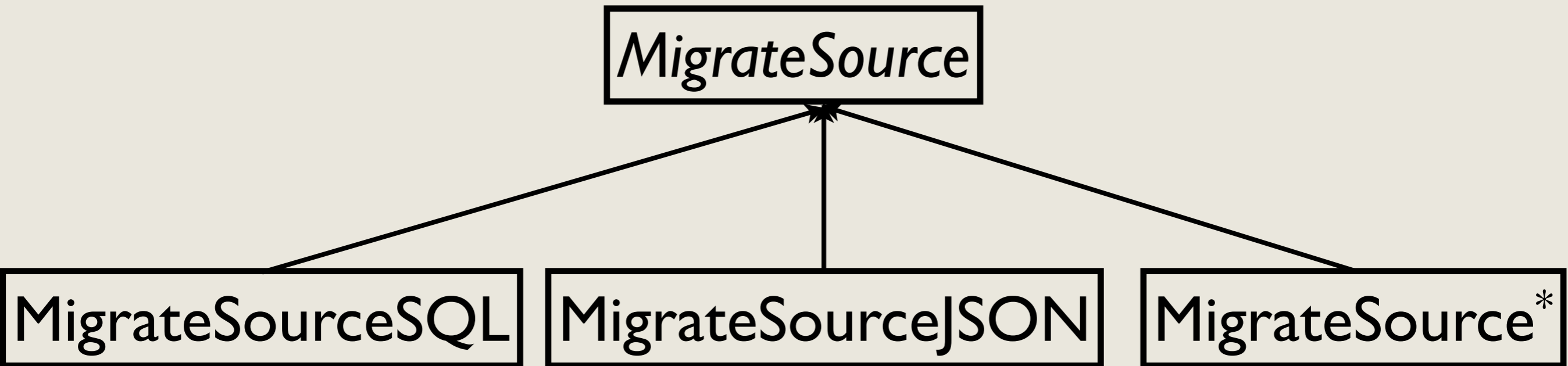
r0303035 Saturday 10 March 2012 - 21.25

Beste,

Kunnen wij ergens de oplossingen vinden van alle oefeningen uit het boek?

---

# EXTRACT





# EXTRACT

idnr	title	mnr	email	date
20050021	1.6/a: $x = \tan(x)$	s0171503	bartvanhove@skynet.be	Sunday 2 October 2005
20091791	4.33 taylorveeltermen bij meerdere veranderlijken	r0297790		Saturday 26 November 2011
20090042	Kurk- en drijfstangmechanisme	s0215276		Wednesday 28 October 2009
8846	energie inhoud van een condensator.	s0109696		Saturday 8 May
10059	tussentijdse toets	s0164158		Wednesday 27 October 2004
10019	Fout in Vraag 2 Zelftest	s0162924	kenzotomita@hotmail.com	Tuesday 5 October 2004
10017	probleem bij het openen van zelftest 1 en 2	s0105157	eli.boudreaux@student.kuleuven.ac.be	Monday 4 October 2004

# EXTRACT













year	Q#	R	course	C#	star	Q	A	time
2005	21	u0010678	analyse	1	ster0.gif	Naar aanleiding van het zoeken	Op zicht kan je zeggen dat $x=0$ een	16.38
2011	58	u0010678	analyse	4		Beste,  Is het mogelijk dat	Ik vrees dat er in jouw oplossing een	15.54
2009	29	u0043795	mech	4		We zagen dit voorbeeld in onze nota's. Ik	Het punt B kan enkel volgens de x-	8.30
2003	460	u0032325	nat	1	ster0.gif	Bij de voorbeelden in het boek en	Bij een photoflash willen we niet	13.26
2004	59	u0018182	mech	9	ster0.gif	Ik weet niet wat er er bedoeld	Het is het tweede, zoals je	10.55
2004	19	u0018182	mech	1	ster0.gif	De vector a heeft als grootte 7 en	Sorry, er stond nog een foutje in de	15.18
2004	17	u0018182	mech	9	ster0.gif	de pc in de bibliotheek geeft, nadat je	Maak je geen zorgen. Dit komt nog in	15.55

```

class QuestionMigration extends Migration {
    public function __construct() {
        // Always call the parent constructor first for basic setup
        parent::__construct();
        $this->description = t('Migrate questions from the source database to drupal users');
        //source definition
        $columns = array(
            0 => array('idnr', 'Database id'),
            1 => array('title', 'Question title'),
            2 => array('mnr', 'mnr of student asking the question'),
            3 => array('email', 'Email of the stydebte'),
            4 => array('date', 'When was the question asked'),
            5 => array('year', 'Year of time '),
            6 => array('questionnr', 'Nr of the question'),
            7 => array('responder', 'Person who responded to the question'),
            8 => array('course', 'Course question belongs to'),
            9 => array('chapter', 'Chapter questione belongs to'),
            10 => array('stars', '#stars (obsolete)'),
            11 => array('question', 'The question itself'),
            12 => array('answer', 'Answer to the question'),
        );
        //Make sure file is UTF encoded with BOM and has MAC linefeeds
        $file_path = DRUPAL_ROOT.'/'.drupal_get_path('module', 'vtmigrate').'/vragen.csv';
        $this->source = new MigrateSourceCSV($file_path,
            $columns,
            array(
                'header_rows' => 1,
                'delimiter' => ';',
            )
        );
    }
};

```

# TARGET CONTENT TYPE

LABEL	MACHINE NAME	FIELD TYPE
 Title	title	Node module element
 Course	field_course_term	<a href="#">Term reference</a>
 Body	body	<a href="#">Long text and summary</a>
 <b>Response by expert</b>	group_response	<input type="text" value="Fieldset"/>
 Answer	field_answer	<a href="#">Long text and summary</a>
 Responder	field_responder	<a href="#">User reference</a>
 Images	field_images	<a href="#">Image</a>
 Attachments	field_attachments	<a href="#">File</a>
 State	field_state	<a href="#">Term reference</a>
 URL path settings	path	Path module form elements
 <b>Add new field</b>		<input type="text" value="- Select a field type -"/>
<input type="text"/>		Type of data to store.
Label		
 <b>Add existing field</b>		

# MAPPING - PART 1

```
//map table
$this->map=new MigrateSQLMap($this->machineName,
    array(
        'idnr' =>array(
            'type' => 'int',
            //'length' => 11,
            'not null' => TRUE,
            'description' => 'The id of the question',
        ),
    ),
    MigrateDestinationNode::getKeySchema()
);
//destination
$this->destination = new MigrateDestinationNode('question');
```

# MAPPING - PART 2

```
//destination
$this->destination = new MigrateDestinationNode('question');
$this->addFieldMapping('title', 'title');
$this->addFieldMapping('body', 'question')
    ->arguments(
        array(
            'format' => 'full_html',
        )
    );
$this->addFieldMapping('field_answer', 'answer')
    ->arguments(
        array(
            'format' => 'full_html',
        )
    );
$this->addFieldMapping('created', 'date');
$this->addFieldMapping('field_course_term', 'course');
```

# MAPPING - PART 2

```
//skip these source fields
$this->addUnmigratedSources(
    array(
        'year',
        'questionnr',
        'stars',
        'time',
        'course',
        'chapter',
        //'answer',
        'responder',
        'mnr',
    )
);
//skip these destination fields
$this->addUnmigratedDestinations(
    array(
        'revision_uid',
        'log',
        'comment',
        //...
        'language',
        'path',
    )
);
```

# MAPPING - OVERVIEW

## Overview

### Destination

28 unmapped. 23 mapped.

### Source

17 mapped.

### Mapping: Done

By priority: 8 OK.

### Mapping: DNM

By priority: 25 OK.

## DESTINATION

## SOURCE

## DEFAULT

title

title

body

question

field\_answer

answer

created

date

field\_course\_term

course

field\_attachments

files

field\_images

images

field\_state

answered



# READY TO MIGRATE

<input type="checkbox"/>	STATUS	MIGRATION	TOTAL ROWS	IMPORTED	UNIMPORTED	MESSAGES
<input type="checkbox"/>	Idle	<a href="#">AllChapterInOne</a>	1826	1638	0	0
<input type="checkbox"/>	Idle	<a href="#">User</a>	61	61	0	0
<input type="checkbox"/>	Idle	<a href="#">UserRole</a>	21	0	21	0
<input checked="" type="checkbox"/>	Idle	<a href="#">Question</a>	5638	5601	0	11260

## OPERATIONS

- Import
- Rollback
- Rollback and import
- Stop
- Reset

# READY TO IMPORT - OPTIONS

## ▼ OPTIONS

Update

Check this box to update all previously-migrated content in addition to importing new content. Leave unchecked to only import new

Ignore dependencies

Check this box to ignore dependencies when running imports – all migrations will run whether or not their dependent migrations have

Limit to:

✓ items  
seconds

Set a limit of how many items to process for each migration, or how long each should run.

DRUPALCAMP  
GHENT 2014

# VARIOUS TOPICS

# DEPENDENCIES

## Overview

### Destination

28 unmapped. 23 mapped.

### Source

17 mapped.

### Mapping: Done

By priority: 8 OK.

### Mapping: DNM

By priority: 25 OK.

## Migration Lead

Pieter-Jan Drouillon <[Pieter-Jan.Drouillon@mirw.kuleuven.be](mailto:Pieter-Jan.Drouillon@mirw.kuleuven.be)>

## Dependencies

AllChapterInOne

## System of record:

Source data

## Description:

Migrate questions from the source database to drupal users

# DEPENDENCIES

```
//add dependency  
$this->dependencies = array( 'AllChapterInOne' );
```

# DRUSH

**Better/faster than UI**

**Start import**

**Reasons why you should drush**

# DRUSH

```
drush mi question --limit="100 items"
```

```
drush mi --rollback
```

```
drush ms question
```

# PREPAREROW

```
public function prepareRow($row) {  
    //setting creationtime to correct timestamp  
    $row->date = $this->convertDateToTimestamp($row->date,$row->time,$row);  
    return TRUE;  
}
```



# PREPARE

```
function prepare($question,stdClass $row){  
    $question->body['und'][0]['value_format'] = 'filtered_html';  
    $question->body['und'][0]['format'] = 'filtered_html';  
  
    $question->field_answer['und'][0]['value_format'] = 'filtered_html';  
    $question->field_answer['und'][0]['format'] = 'filtered_html';  
}
```

# MULTI-KEY MAP

```
//map table
$this->map=new MigrateSQLMap($this->machineName,
    array(
        'chapterid' =>array(
            'type' => 'int',
            'not null' => TRUE,
            'description' => 'The chapter ID',
        ),
        'course' => array(
            'type' => 'varchar',
            'length' => 10,
            'not null' => TRUE,
            'description' => 'The course ID',
        ),
        'year' => array(
            'type' => 'int',
            'not null' => TRUE,
            'description' => 'The year of the course',
        ),
    ),
    MigrateDestinationTerm::getKeySchema()
);
```

# USER IMPORT

```
class UserMigration extends Migration {
  public function __construct() {
    // Always call the parent constructor first for basic setup
    parent::__construct();
    $this->description = t('Migrate users from the source database to drupal users');
    //map table
    $this->map=new MigrateSQLMap($this->machineName,
      array(
        'unr' =>array(
          'type' => 'varchar',
          'length' => 8,
          'not null' => TRUE,
          'description' => 'The KU Leuven unnumber',
        ),
      ),
      MigrateDestinationUser::getKeySchema()
    );
    //...
```

# USER IMPORT

```
//source definition
$columns = array(
    0 => array('name', 'Name of the user'),
    1 => array('unr', 'Unnumber of the user'),
    2 => array('email', 'Email of the user'),
    3 => array('course', 'The course the user is involved'),
    4 => array('monitor', 'Is this user a monitor?'),
    5 => array('id', 'Database id'),
    6 => array('roles', 'The courses involved (will be mapped to roles)'),
);

//Make sure file is UTF encoded with BOM and has MAC linefeeds
$file_path = DRUPAL_ROOT.'/'.drupal_get_path('module', 'vtmigrate').'/personeel.csv';
//drupal_set_message(fopen($file_path, 'r'));
//drupal_set_message($file_path);
$this->source = new MigrateSourceCSV($file_path,
    $columns,
    array(
        'header_rows' => 1,
        'delimiter' => ';',
    )
);

//destination
$this->destination = new MigrateDestinationUser();
//...
```

# USER IMPORT - MAPPING

```
//mapping
$this->addFieldMapping('name','unr');
$this->addFieldMapping('mail','email');
//$this->addFieldMapping('role_names','roles')
//      ->separator(',');

//skip these source fields
$this->addUnmigratedSources(
    array(
        'name',
        'course',
        'monitor',
        'id',
        'roles',
    )
);
//skip these destination fields
$this->addUnmigratedDestinations(
    array(
        'is_new',
        //...
        'picture',
        'init',
        'path',
        'pathauto',
    )
);
```

# USER MAPPING - PREPARE

```
public function prepare($user, stdClass $row){
    //add all the role ids to the user account
    $role_names = explode(',', $row->roles);

    //check if role didactisch team bestaat
    $new_role = array('didactisch team');
    foreach($new_role as $r){
        if(!user_role_load_by_name($r)){
            //create it
            $role = new stdClass();
            $role->name = $r;
            user_role_save($role);
        }
    }
    $role = user_role_load_by_name('didactisch team');
    // $user role is a mapping from role id to role name
    $user->roles[$role->rid] = $role->name;
}
```

# DATE

```
//as suggested in https://drupal.org/node/1806296#comment-6589830  
public function prepareRow($row) {  
    //for some reason, 2 hours have to be added  
    $row->startdate = strtotime("+2 hours", $row->startdate);  
    $row->enddate = strtotime("+2 hours", $row->enddate);  
    $row->datespan = drupal_json_encode(array(  
        'from' => $row->startdate,  
        'to'    => $row->enddate  
    ));  
    //change linebreaks back to newlines  
    $row->body = str_replace('<br/>', "\n", $row->body);  
}
```

# REFERENCE

```
public function prepareRow($entity, stdClass $row) {
    //...
    $loc_query = db_select('node', 'n')
        ->fields('n')
        ->condition('n.type', 'location')
        //MYSQL's like is case insensitive
        ->condition('n.title', '%' . $key . '%', 'LIKE');
    $locations = $loc_query->execute();

    if(!empty($locations)){
        foreach($locations as $loc){
            //target_id is specific for entity reference
            // cf https://drupal.org/node/1845986
            $entity->field_location['und'][0]['target_id'] = $loc->nid;
        }
    }
}
```



# USER MIGRATION

```
$this->destination = new MigrateDestinationUser(  
    array(  
        'md5_passwords' => TRUE,  
    )  
);
```

# FILES & IMAGES

**Link to files in answer**

**Be creative**

**Use Regex :)**

# FILES & IMAGES

```
$this->addFieldMapping('field_attachments', 'files')  
    ->separator('#');  
  
$this->addFieldMapping('field_images', 'images')  
    ->separator('#');
```

# FILES & IMAGES

```
$files = array();
$nr_matches = preg_match_all('/<a href="(\S+)"/i', $row->answer, $matches, PREG_SET_ORDER);
//drupal_set_message("#match: ".print_r($nr_matches, true), 'warning');
if($nr_matches > 0){
    drupal_set_message("#filematch: ".print_r($matches, true), 'warning');
    $base_url = 'https://mirw.kuleuven.be/vragentrommel/trommelroot/';
    //all matches are stored in an array at $matches[0]
    foreach($matches as $match){
        $files[] = $base_url . $match[1];
    }
}
//add the URI of the files to $row->files and separate them by hashtag
$row->files = implode('#', $files);
```

# FILES & IMAGES

```
$images = array();
$nr_matches = preg_match_all('/<img src=( [^\s\>]+)\>/i', $row->answer,
$matches, PREG_SET_ORDER);
//drupal_set_message("#match: ".print_r($nr_matches, true), 'warning');
if($nr_matches > 0){
    drupal_set_message("#image match: ".print_r($matches, true), 'warning');

    $base_url = 'https://mirw.kuleuven.be/vragentrommel/trommelroot/';

    //all matches are stored in an array at $matches[0]
    foreach($matches as $match){
        $file_url = $base_url . $match[1];
        $images[] = $file_url;
    }
}
//add the URI of the images to $row->images, separated with #
$row->images = implode('#', $images);
```

DRUPALCAMP  
GHENT 2014

# CONCLUSION

DRUPALCAMP  
GHENT 2014

# RESOURCES

# RESOURCES

[Migrate Documentation](#)

[Migrate Example](#)

[BTMash](#)



# Q & A

## @pjdrouillon

