



MASTER OF SCIENCE  
IN ENGINEERING

UNIVERSITY OF APPLIED SCIENCES WESTERN SWITZERLAND  
MSE - SOFTWARE ENGINEERING

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## Projet d'approfondissement Inphinity

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# 1 Introduction

**TODO:** phages Vs bacteria

## 2 State of the art

### 2.1 Biology

TODO: genome

### 2.2 Bio-informatic

TODO: sequence alignment

## 3 Methods

### 3.1 Docker

#### 3.1.1 Docker-machine installation

#### 3.1.2 Docker commands

#### 3.1.3 Inphinity, build & run

### 3.2 Phamerator

#### 3.2.1 Installation

**TODO:** install on GUI machine

#### 3.2.2 How it's works

**TODO:** screens + explain

### 3.3 PhamDB

#### 3.3.1 Installation & Run

#### 3.3.2 Utilisation

### 3.4 Database & Dataset

### 3.5 Phamily

#### 3.5.1 Alignment

#### 3.5.2 Phages selection

#### 3.5.3 Data completion

## 4 Results & Analyse

### 4.1 First result

#### 4.1.1 Tree

#### 4.1.2 Hosts

### 4.2 Database

#### 4.2.1 SEA

#### 4.2.2 Phages list integration

## 5 Conclusion

### 5.1 Problems encountered

#### 5.1.1 Phamerator Installation

#### 5.1.2 SEA database

#### 5.1.3 PhamDB Limitation jobs

#### 5.1.4 PhageDB.org

### 5.2 Perspectives

#### 5.2.1 Database population

#### 5.2.2 Resultats validation

#### 5.2.3 Results by host

## 6 References



## **7 Annexes**