



Hogeschool

Eindpresentatie

Team 6

Muhammed Mert - 1SNEb

Michel Michaux - 1SNEb

Rens Renders - 1SNEd

Thimo Quarem - 1SNEd

Kevin Van Der Biest - 1SNEb



Resultaat Sprint 3 & 4



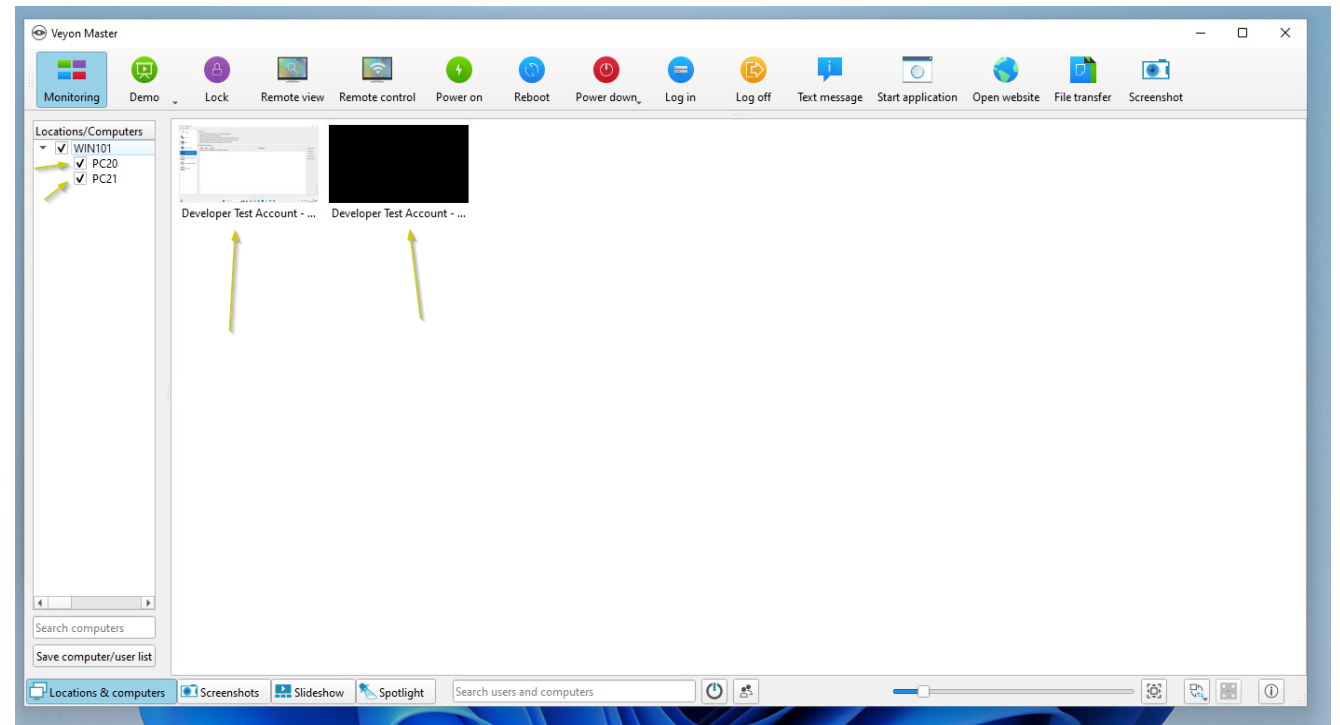
Hogeschool

Veyon Classroom Utility

Muhammed Mert – 1SNEb

Veyon

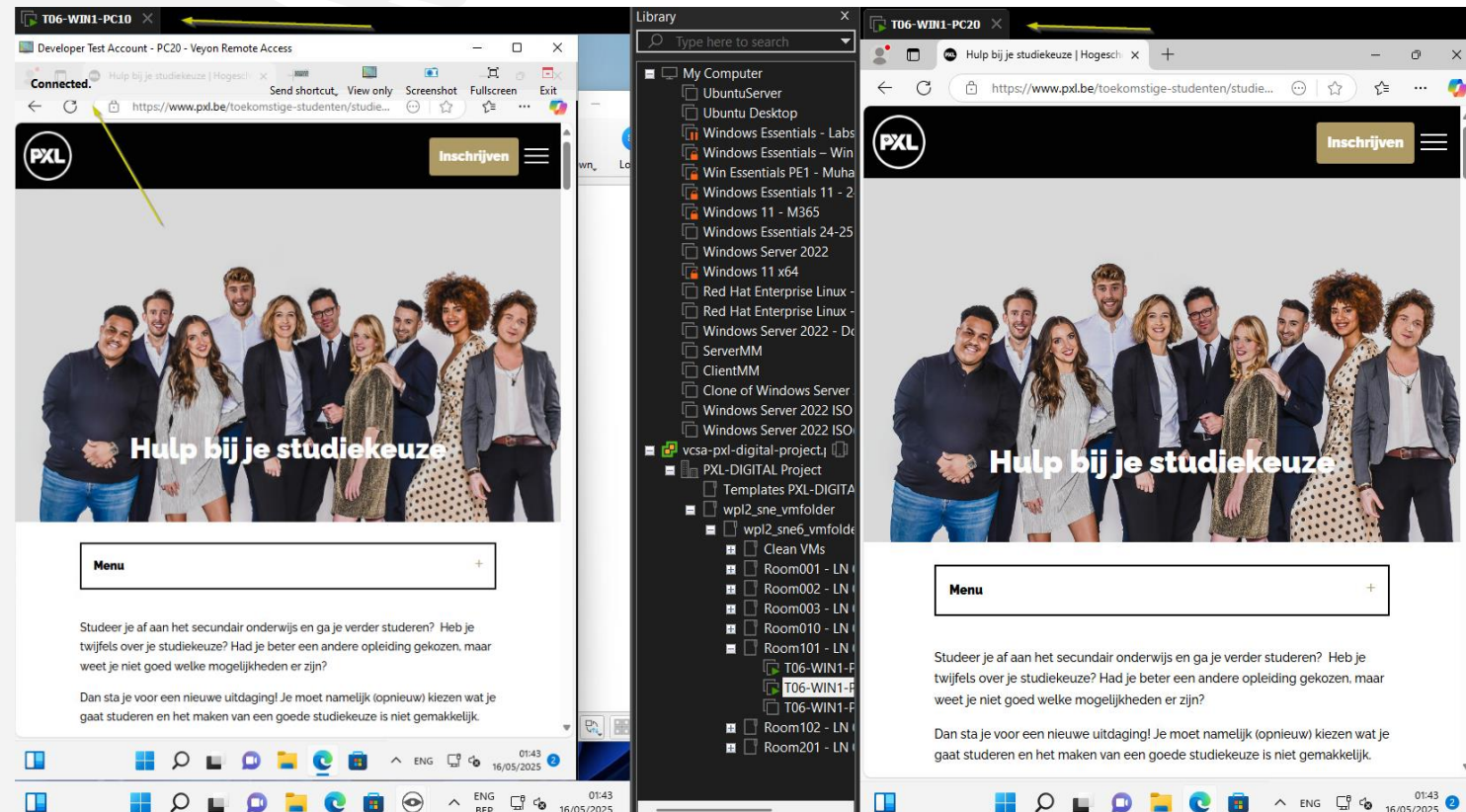
- Speciaal voor scholen
- Eenvoudig en overzichtelijk beheren
 - Gebruiksvriendelijk
 - Gratis Windows
 - Veilig en passend voor schoolomgeving
- Gebruik Master
 - Monitoring
 - Demo
 - Lock



Veyon Master



- Resultaat
 - Meer controle en minder afleiding
 - Bestanden of instructies verzenden
 - Digitale veiligheid en focus leerlingen
- Monitoring
 - PC10 – lector pc
 - PC20 – student pc
 - PXL site – remote lector pc





Hogeschool

LMS en Ticketing service

Michel Michaux – 1SNEb

Waarom aparte servers?

- Performanter
- Toekomst zeker (uitbreidingen)
- Makkelijker te back-uppen
- Aparte databases

Moodle

- Verbonden met het domein
- Open-Source
- Gratis
- Gekend in de onderwijs wereld



Home

DZB Moodle

Available courses

[Moodle how to use](#)

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Teacher: [Admin User](#)



Hogeschool



- Tried & Tested
- Stabiel
- Open source
- Gratis
- Niet te uitgebreid



OSTicket interface screenshot showing a ticket details page for Ticket #949377.

Top navigation: Dashboard, Users, Tasks, **Tickets**, Knowledgebase

Sub-navigation: Open, My Tickets, Closed, Search, New Ticket

Ticket #949377: Test

Metadata:

- Status: Open
- Priority: Low
- Department: Support
- Create Date: 04/04/25 15:41:48
- User: Michel Michaux (1) (Manage Collaborators)
- Email: michel.michaux@student.pxl.be
- Source: Web (10.6.2.117)

Assigned To: — Unassigned —

SLA Plan: Default SLA

Due Date: 04/08/25 15:41:48

Help Topic: Feedback

Last Message: 04/04/25 15:41:49

Last Response:

Ticket Thread (1) | Tasks

Michel Michaux posted 04/04/25 15:41:49

Dit is een test

Created by Michel Michaux 04/04/25 15:41:49

Flagged as overdue by the system 05/16/25 16:00:37

Marked overdue!

Post Reply | Post Internal Note

From: Support <helpdesk@dzb.local>

Recipients: "Michel Michaux" <michel.michaux@student.pxl.be>



Hogeschool

Powershell Remote

Michel Michaux – 1SNEb



- Logisch opgebouwd voor IT
- Makkelijk uitbreidbaar
- Aangepast aan de school situatie



```
DZB Command script - choose an option. Choose 0 to quit.
```

1. Add client(s)
2. Remove client
3. Execute command
4. Display current selected clients
0. Exit

Choice:

1. Add client(s)
2. Remove client
3. Execute command
4. Display current selected clients
0. Exit

Choice:



Hogeschool

Printserver

Rens Renders – 1SNEd

Printserver

- Papercut NG
- AD automatisch toegevoegd
- Betaalsysteem ingebouwd
- Printbeheer en -tracking
- Platformonafhankelijkheid
- Beveiliging

PRINTERVOUCHER

DZB

Voornaam:
Achternaam:
Printkrediet: €.....





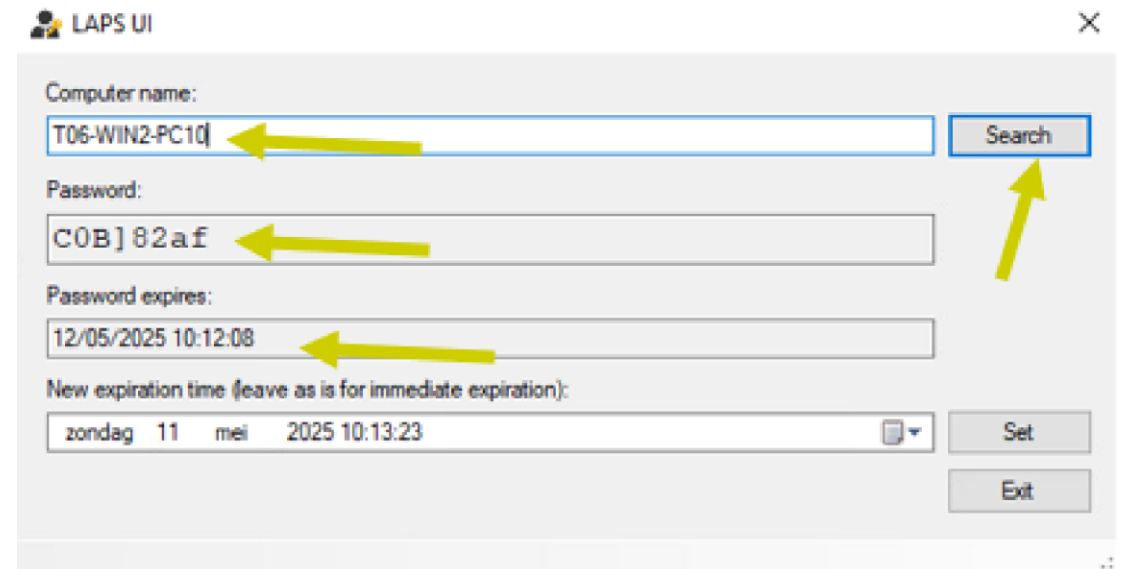
Hogeschool

LAPS

Rens Renders – 1SNEd

LAPS

- Local Administrator Password Solution
- Automatisch willekeurige, complexe wachtwoorden voor lokale beheerdersaccounts
- Beveiliging
- Toegang en Monitoring



The screenshot shows the LAPS UI window with the following fields and values:

- Computer name: T06-WIN2-PC10
- Password: C0B] 82a.f
- Password expires: 12/05/2025 10:12:08
- New expiration time (leave as is for immediate expiration): zondag 11 mei 2025 10:13:23

Yellow arrows point to the Computer name, Password, and Password expires fields. A blue arrow points to the Search button. The Set and Exit buttons are at the bottom right.



Hogeschool

Ansible

Rens Renders – 1SNEd

Ansible

- Automatisatie, bespaart veel tijd
- Agentloze Architectuur (SSH & Python)
- Schaalbaarheid en Flexibiliteit
- Beveiliging
- Relatief makkelijk te configureren (Linux)

```
administrator@t06-ict-pc01: $ ansible-playbook install_apache.yml --ask-become-pass
BECOME password:

PLAY [Install Apache on Ubuntu] *****

TASK [Gathering Facts] *****
[WARNING]: Platform linux on host T06-LIN-PC10 is using the discovered Python interpreter at
/usr/bin/python3.12, but future installation of another Python interpreter could change the meaning
of that path. See https://docs.ansible.com/ansible-core/2.18/reference_appendices/interpreter_discovery.html for more information.
ok: [T06-LIN-PC10]

TASK [Update local package cache] *****
changed: [T06-LIN-PC10]

TASK [Install Apache webserver] *****
changed: [T06-LIN-PC10]

TASK [Start Apache service] *****
ok: [T06-LIN-PC10]

PLAY RECAP *****
T06-LIN-PC10 : ok=4 changed=2 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0

administrator@t06-ict-pc01: $
```





Hogeschool

Ubuntu pro

Rens Renders – 1SNEd

Ubuntu pro

- Uitgebreide Beveiligingsupdates
- Gratis voor Persoonlijk Gebruik
- Livepatch voor Kernel
- Landscape Beheertool
- Ondersteuning en Diensten





Hogeschool

Beperkingen

Thimo Quarem – 1SNEd

Group Policy Objects

- Beperkt aantal functies voor studenten gebruikers
- Makkelijk te beheren

Start Menu and Taskbar		
Policy	Setting	Comment
Do not allow pinning programs to the Taskbar	Enabled	
Do not keep history of recently opened documents	Enabled	
Do not search programs and Control Panel items	Enabled	
Do not use the search-based method when resolving shell shortcuts	Enabled	
Prevent changes to Taskbar and Start Menu Settings	Enabled	
Remove "Recently added" list from Start Menu	Enabled	
Remove access to the context menus for the taskbar	Enabled	
Remove All Programs list from the Start menu	Enabled	
Choose one of the following actions	None	
System		
Policy	Setting	Comment
Prevent access to registry editing tools	Enabled	
Disable regedit from running silently?	Yes	
Policy	Setting	Comment
Prevent access to the command prompt	Enabled	
Disable the command prompt script processing also?	No	
System/Ctrl+Alt+Del Options		
Policy	Setting	Comment
Remove Task Manager	Enabled	
Windows Components/File Explorer		
Policy	Setting	Comment
Do not track Shell shortcuts during roaming	Enabled	
Hide these specified drives in My Computer	Enabled	
Pick one of the following combinations	Restrict all drives	

Quota's & file screening

- Beperkt het aantal schijfruimte per gebruiker
- In de Z: schijf kunnen studenten MAX 1GB gebruiken
- Na 90% gebruik wordt mail verstuurd
- File screening blokkeert video en audio

```
PS C:\Scripts> New-FsrmAutoQuota -Template "1GB Limit with 90% warning" -Path Z:\Personal\Studenten

Disabled      : False
Path          : Z:\Personal\Studenten
Size          : 1073741824
SoftLimit     : False
Template      : 1GB Limit with 90% warning
Threshold     :
UpdateDerived : False
UpdateDerivedMatching : False
SourceComputerName :
```

```
PS C:\Scripts> New-FsrmFileScreen -Path "Z:\Personal\Studenten" -IncludeGroup "Audio and Video Files" -Notification (New-FsrmAction -Type Email -MailTo "[Admin Email];[File Owner]" -Subject "Warning: attempted to create an audio or video file" -Body "You attempted to upload audio or video file. This is not allowed." -RunLimitInterval 120) -Active

Active        : True
Description   :
IncludeGroup  : {Audio and Video Files}
MatchesTemplate : False
Notification  : {MSFT_FSRMAction}
Path          : Z:\Personal\Studenten
Template      :
SourceComputerName :
```




Hogeschool

FOG Imaging Solution

Thimo Quarem – 1SNEd

FOG Server

- Tool om besturingssystemen op te slaan
- Vervolgens te distribueren over het netwerk
- Snel en efficiënt

Host is NOT registered!

Boot from hard disk

(1)

Run Memtest86+

Perform Full Host Registration and Inventory

Quick Registration and Inventory

Deploy Image

Join Multicast Session

Client System Information (Compatibility)

Debug Mode



FOG Project

Open Source Computer Cloning Solution



Hogeschool

Firewall

Kevin Van Der Biest - 1SNEd

Firewall - PfSense

- Team support
- Verschillende revisies na veel troubleshooting
- Logische structuur en "bare minimum" aanpak
- Gedetailleerde ruleset en aliasen → Gedocumenteerd



	Allow	IPv4 TCP/UDP	WIN101 net	Any	PORTS_WEB	Outbound traffic to the internet
WIN102	Allow	IPv4 TCP/UDP	ICT_DCs	WIN102 net	PORTS_AD	Traffic FROM domain controllers (management)
	Allow	IPv4 TCP/UDP	ICT002 net	WIN102 net	PORTS_DMZ	Access FROM ICT (management)
	Allow	IPv4 TCP/UDP	DMZ001 net	WIN102 net	PORTS_DMZ_internal	DMZ servers communication with internal networks (restricted)
	Allow	IPv4 TCP/UDP	Win102 net	ICT_DCs	PORTS_AD	Traffic TO domain controllers (management)
	Allow	IPv4 TCP	Win102 net	10.6.102.10	21 (FTP)	Upload/Download to/from Teacher PC
	Reject	IPv4 Any	Student PCs	Student PCs	Any	Block traffic between student PCs
	Allow	IPv4 TCP/UDP	Win102 net	Any	PORTS_WEB	Outbound traffic to the internet
COR010	Allow	IPv4 TCP/UDP	ICT_DCs	COR010 net	PORTS_AD	Corner PC management
	Allow	IPv4 TCP/UDP	ICT002 net	COR010 net	PORTS_DMZ	Access FROM ICT (management)
	Allow	IPv4 TCP/UDP	DMZ001 net	COR010 net	PORTS_DMZ_internal	DMZ servers communication with internal networks (restricted)
	Allow	IPv4 TCP/UDP	COR010 net	ICT_DCs	PORTS_AD	Traffic TO domain controllers (management)
	Allow	IPv4 TCP/UDP	COR010 net	Any	PORTS_WEB	Outbound traffic to the internet
	Reject	IPv4 Any	COR010 net	Any	Any	Block all other traffic from the internet corner
SEC003	Allow	IPv4 TCP/UDP	ICT_DCs	SEC003 net	PORTS_AD	Secretariat PC management
	Allow	IPv4 TCP/UDP	ICT002 net	SEC003 net	PORTS_DMZ	Access FROM ICT (management)
	Allow	IPv4 TCP/UDP	DMZ001 net	SEC003 net	PORTS_DMZ_internal	DMZ servers communication with internal networks (restricted)
	Reject	IPv4 Any	NET_Classrooms	SEC003 net	Any	Block traffic from classrooms PCs to the secretariat
	Allow	IPv4 TCP/UDP	SEC003 net	ICT_DCs	PORTS_AD	Traffic TO domain controllers (management)
	Allow	IPv4 TCP/UDP	SEC003 net	Any	PORTS_WEB	Outbound traffic to the internet



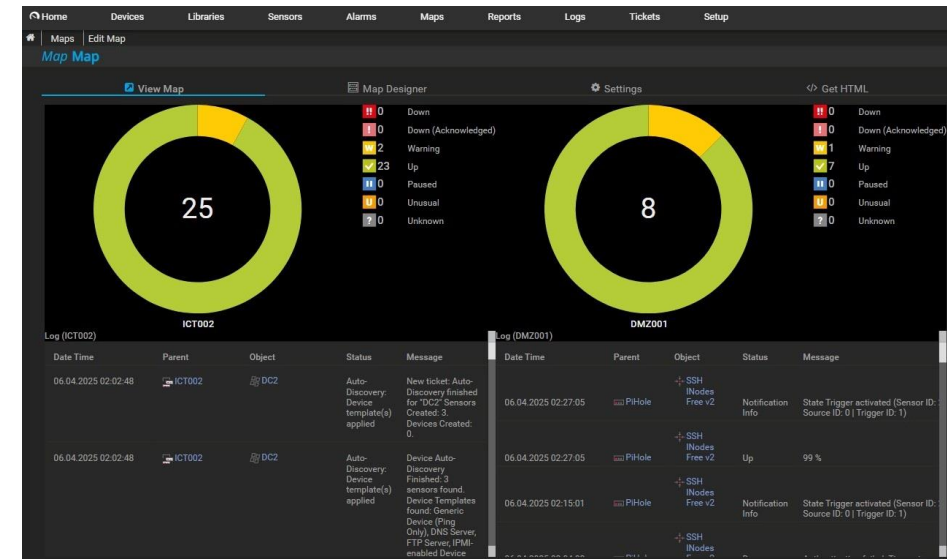
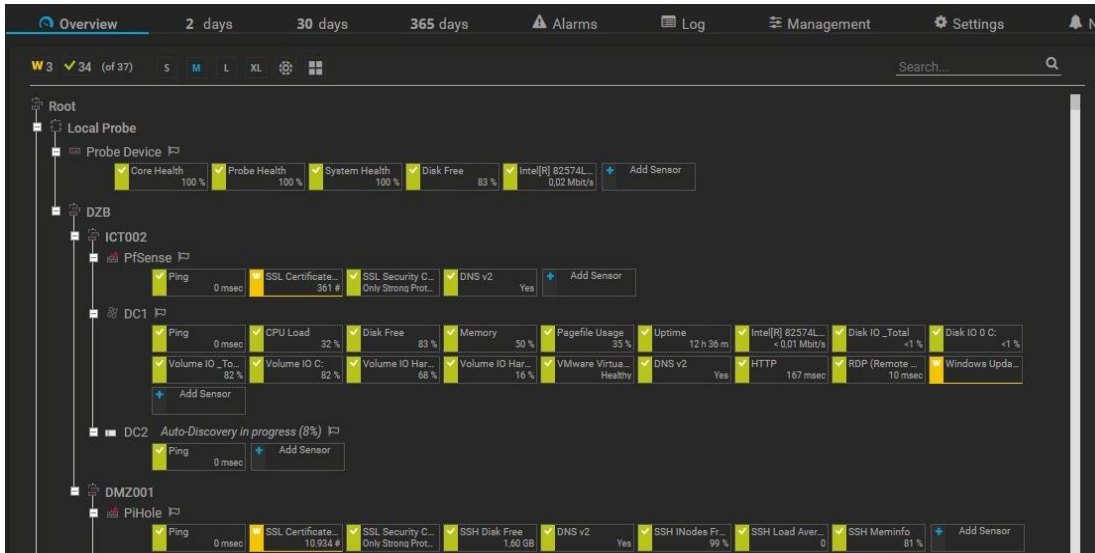
Hogeschool

PRTG Monitoring Tool

Kevin Van Der Biest - 1SNEd

Monitoring - PRTG

- Volgt de status van de verschillende servers & services
- Sensoren voor o.a. CPU of schijfgebruik, bereikbaarheid, ...
- Automatische meldingen, bijv. Via e-mail
- Dashboard → overzicht op 1 pagina





Hogeschool

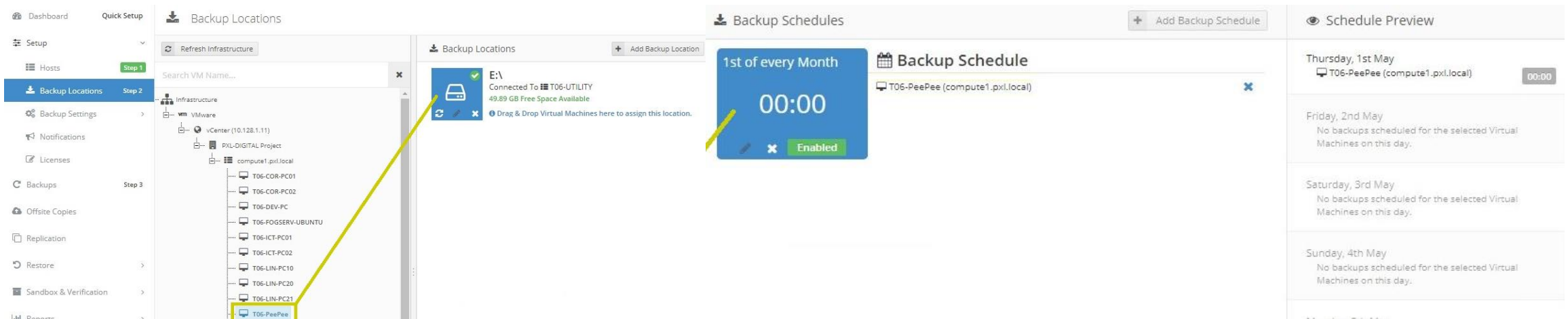
Altaro VM Backup

Kevin Van Der Biest - 1SNEd

VM Back-up - Altaro



- Automatische back-ups van VM('s)
- Op 1 of meerdere locaties, bijv. D:-schijf back-up server
- Automatische meldingen en logs, bijv. bij succes of mislukking
- Volledige VM's herstellen of specifieke bestanden

The image shows the Altaro VM Back-up software interface. On the left is a sidebar with navigation options: Dashboard, Quick Setup, Setup (with sub-items: Hosts, Backup Locations, Backup Settings, Notifications, Licenses, Backups, Offsite Copies, Replication, Restore, Sandbox & Verification), and Reports. The main area is divided into three panels. The 'Backup Locations' panel shows a tree view of the infrastructure, including vCenter (10.128.1.11), PXL-DIGITAL Project, and a list of VMs like T06-COR-PC01, T06-COR-PC02, T06-DEV-PC, T06-FOGSEV-UBUNTU, T06-ICT-PC01, T06-ICT-PC02, T06-LIN-PC10, T06-LIN-PC20, T06-LIN-PC21, and T06-PeePee. A yellow arrow points from the 'T06-PeePee' VM in the tree to a 'Backup Location' card in the 'Backup Locations' panel. This card shows 'E:\' as the location, connected to 'T06-UTILITY', with '49.89 GB Free Space Available'. The 'Backup Schedules' panel shows a 'Backup Schedule' for 'T06-PeePee (compute1.pxl.local)' with a frequency of '1st of every Month' and a time of '00:00'. A yellow arrow points from the '00:00' time to the 'Enabled' status. The 'Schedule Preview' panel shows a list of dates: Thursday, 1st May (with a backup at 00:00), Friday, 2nd May (no backups), Saturday, 3rd May (no backups), and Sunday, 4th May (no backups).



Aanpak sprint 3 & 4

Werkverdeling Sprint 3

Teamgenoot	Onderdeel	Tijdsbesteding
Michel Michaux	TASK-046: LMS Implementeren	9:52:23
	Oplossen issues met client pc's	2:26:45
Rens Renders	TASK-045: Printserver implementeren	10:16:31
Thimo Quarem	TASK-015: Groepsbeleid configureren	6:23:44
	TASK-040: Remote access instellen	3:00:00
Kevin Van Der Biest	Revisie Trello en Onenote product- en sprint backlog	3:00:00
	TASK-030: Monitoringtool en dashboard implementeren	9:40:00
	Firewall revisies & troubleshooting	13:49:12

Werkverdeling Sprint 4

Teamgenoot	Onderdeel	Tijdsbesteding
Muhammed Mert	TASK-047: Veyon Classroom Utility implementeren	24:43:15
Michel Michaux	TASK-046: LMS Implementeren & AD Integratie	6:34:32
	TASK-051: Powershell bulk command script maken	6:08:40
Rens Renders	TASK-041: LAPS implementeren	6:28:05
	TASK-050: Configuratie-automatisering (Ansible)	11:00:00
Thimo Quarem	TASK-042: Quota's implementeren	3:46:48
	TASK-048: FOG Imaging Solution implementeren	18:23:22
Kevin Van Der Biest	TASK-049: VM Backup Tool implementeren (Altaro)	17:37:48
	Firewall troubleshooting (FOG)	↑

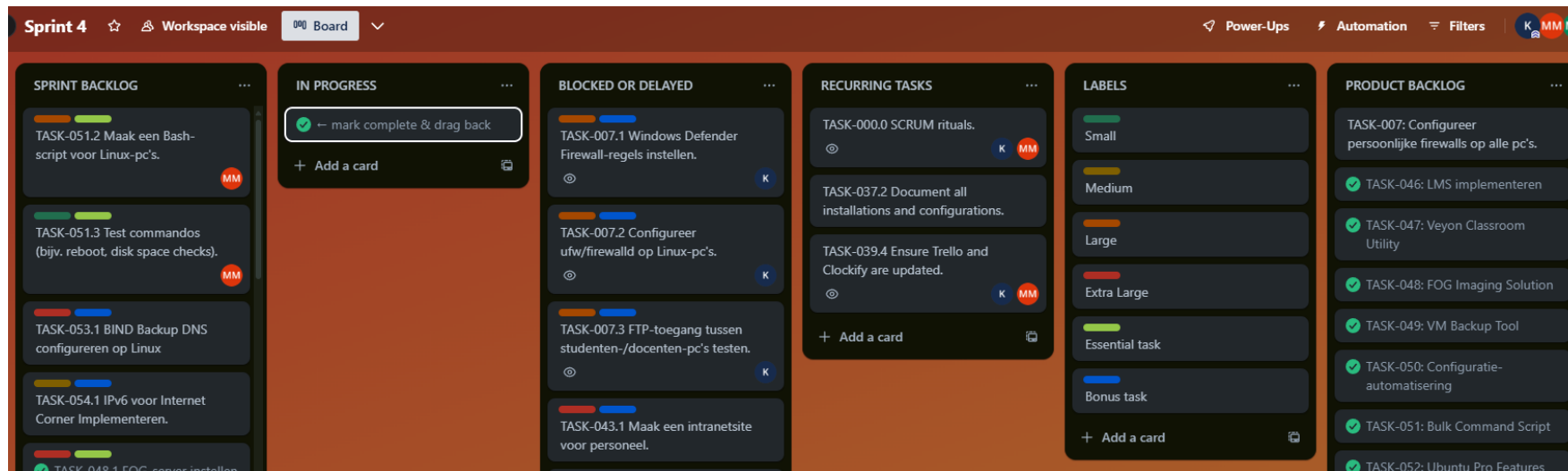
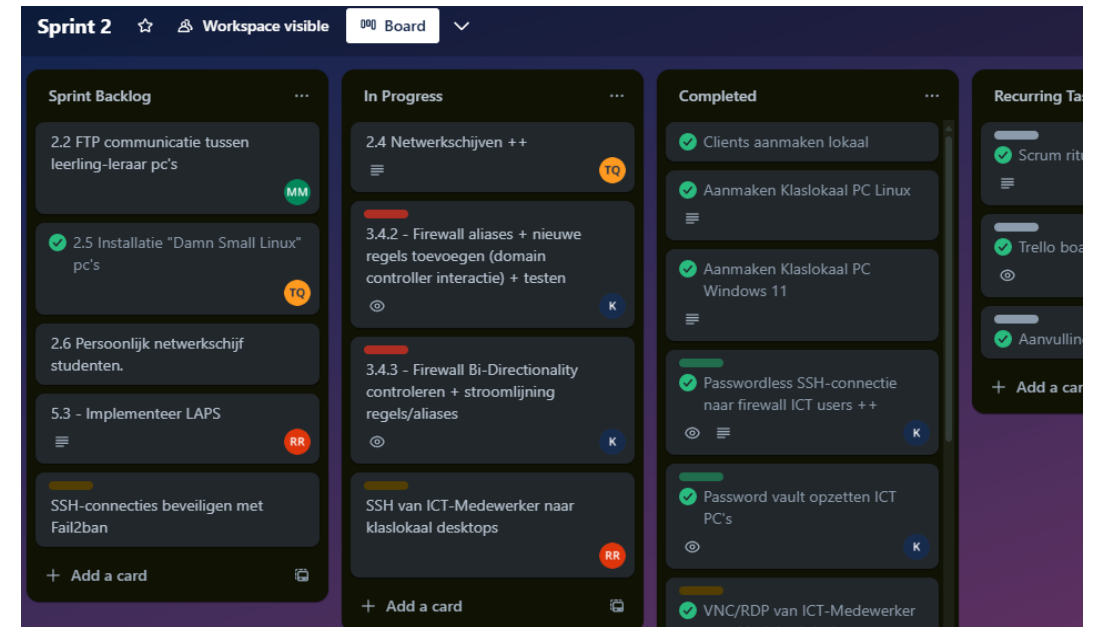


Hogeschool

Teamsamenwerking

Lessons learned

- Steek extra tijd in backlog structuur
- Resultaat: beter overzicht, ook in Trello



Lessons learned

- Wees productief lui
- AI gebruiken voor specifieke vragen, niet algemene

Lessons learned

- Wees niet bang om te experimenteren met verschillende methodes
- Neem op tijd een korte pauze wanneer je tegen een frustrerend probleem aanloopt.

Tips naar de toekomst

- Grote opdrachten eerst
 - Kleine erna...
- Zinnige doordachte benamingen
 - (Geen student als admin account)
- Goede basis leggen documentatie
- Probeer eerst zelf problemen op te lossen voordat je een hulplijn inschakeld



Hogeschool

Onze SDG's

Inzetten op open source

- Zoveel mogelijk gebruik van Open-Source oplossingen

