

A Star Wars spaceship, possibly a Millennium Falcon, is shown flying through a starfield. The ship is positioned in the upper left quadrant, moving towards the right. The background is a dense field of stars, creating a sense of depth and motion. The overall color palette is dark blue and black, with white stars and a white text overlay.

Migrating 515 AD servers to Samba

In a galaxy NOT far far away!

Caglar Ulkuderner
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Regions

Digital Transformation



Ankara

İstanbul

Sofya

Doha



37.301
Computer



1.184
Location



515
Server

Galaxy

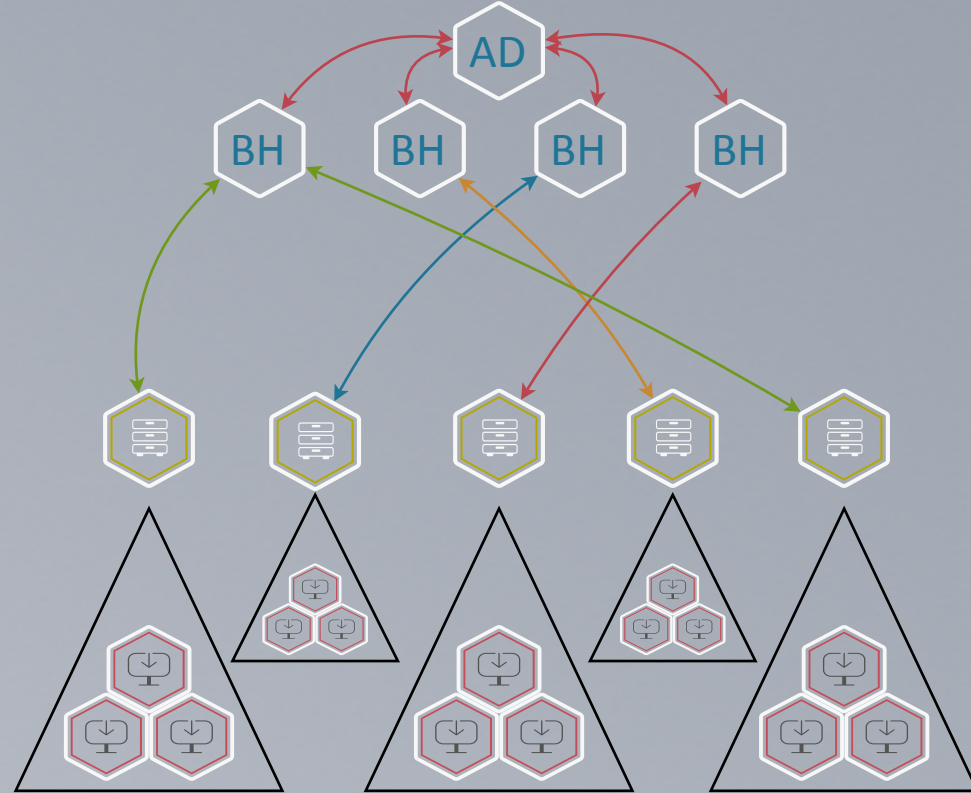
Ministry of Finance

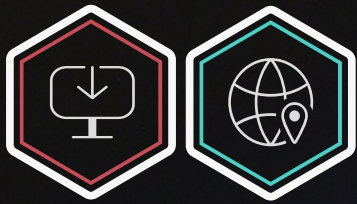
Revenue Administration

Organisational page
www.gib.gov.tr

Project page
gibux.gib.gov.tr

Network Topology





37.301
Computer

1.184
Location

GIBUX
Gibux Gibux Gibux Gibux Gibux



History of Gibux

Starting Project

April 2013

Analysing and design

R&D Phase

June 2013 -February 2014

Developing required OS modules and some device drivers which is required for production

First Flight

February 2014

Release Candidate version has been installed on two tax office

Production Release

January 2015

Production release has been published and mass installation started to country wide

Central Information System

March 2015

CIS go live to keep tracks of every installed Gibux release

Fully Operational

January 2018

Finished deployments in country wide

1034032109

Kullanici adi: 999888777
Parola: [redacted]

IP: 10...
SURUM: 1.3...
YAMA: 7



AD to Samba...

Project Requirements

Forest Structure

Need to support hybrid structure with Microsoft AD, work as a part of forest.

ACL Support

Every user must have his/her private and public directory to keep files safe and share if necessary

Local DNS Support

Every site must have a local DNS infrastructure to use local resources.

DHCP & TFTP Support

Every Samba server must support DHCP and TFTP to handle Gibux machines and PXE installation.

Easy Management

Site technicians must take care of local user requirements.

Automated Migration

Current data on Microsoft AD must be easily migrated by local technicians.



“Do or do not, there is no try.”

Master Yoda

Project Challenges

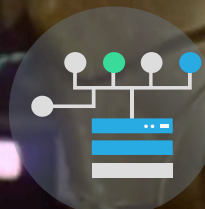
“Never tell me the odds.” - Han Solo



Manage

Web Based Management

1. Need local web based management services like **Samba, BindDNS, TFTP, SaltStack**
2. Central Management for all servers



Replication

Max 15 min

Every server must complete the replication in 15 minutes NTDS management must be managed centrally



SLA

Max 15 min.

In working hours there is no tolerance of failure. If any problem occurs you have to respond in 15 minutes. Transactions must continue and problem has to be solved in 1 hour.

Migration Steps

"In my experience there is no such thing as luck." – Obi-Wan Kenobi

Prepare base
SUSE installed HW



Go to location and
install new hardware



TAX OFFICE

Install **Rsync** on Windows,
Export DHCP configuration to IIS dir



AVERAGE INSTALL CYCLE

03:00

AVG. TIME
HOURS



DHCP

Download exported DHCP
records and import it to
isc-dhcpd



DNS

Preparing local DNS
servers with Bind
according to site data



TFTP

Getting TFTP and
configure local settings



Join DC

Join AD and
replicate initial
data.

- Samba 4.10.6
- Do not update NS
(required patch)



ACL

Set Private and Public
share ACLs

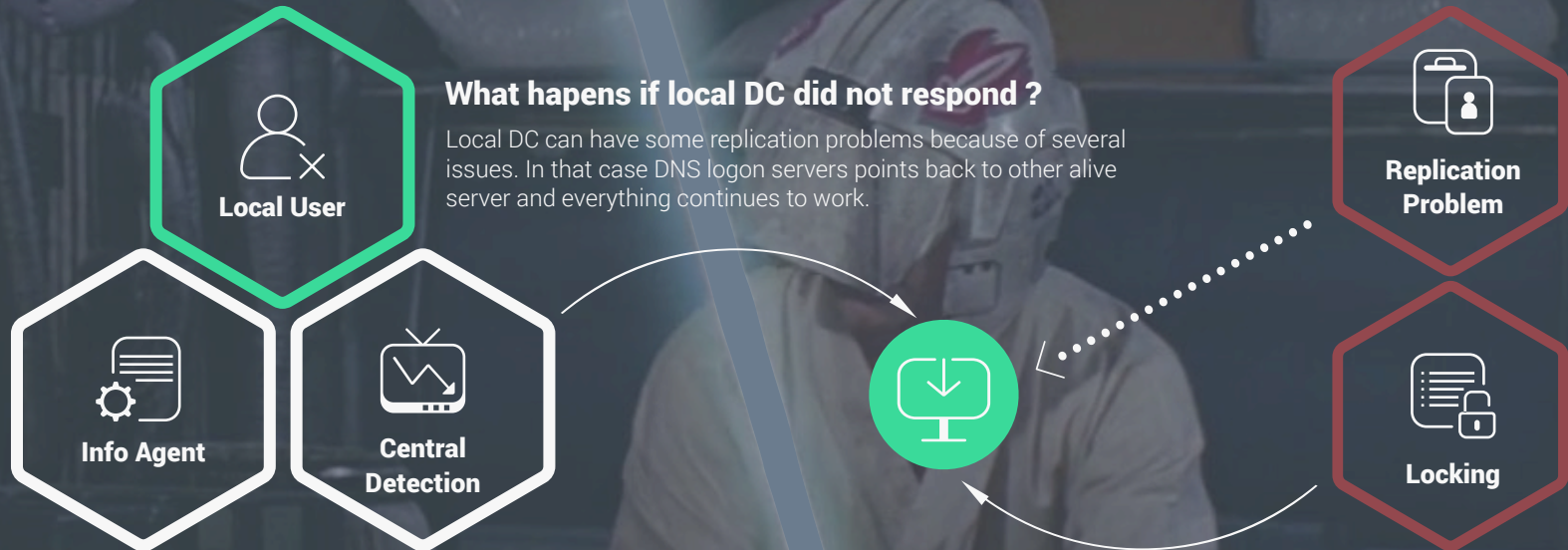
AVERAGE MIGRATION CYCLE

02:00

AVG. TIME
HOURS

What if a **problem** occurs or **replication** breaks

"Your eyes can deceive you. Don't trust them." – Obi-Wan Kenobi



What is **check-list** before join

"Somebody has to save our skins." – Leia Organa



Network

Check latency on WAN

If you will open your network on WAN, latency is very important. You need to arrange kernel parameters and NTDS



DNS

Old DNS records are pain

DNS is very important part of Directory Server. Old datas, removed zones cause resolution problems which also triggers replication problems.



Metadata

Old objects, huge problems

Uncleaned metadata objects cause replication problems. If you need to use an IP which used by demoted server you must clean metadata

SBX - Directory Management - Users

MAIN NAVIGATION

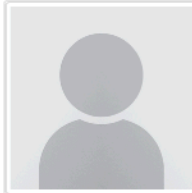
- Dashboard
- Health Monitor
- Directory Management
 - Tree
 - Users
 - Groups
 - Computers
 - Organizational Units
 - Replication
 - GPO Synchronization
 - Add User
 - Add Group
 - Add Organizational Unit
- Orchestration
- DNS Management
- DHCP Management
- Date & Time Settings

USER LIST

Search:

| DETAILS | PICTURE | NAME |
|---------|---------|------|
|---------|---------|------|

| | | |
|--|--|---------------|
| | | Administrator |
|--|--|---------------|



| | |
|-----------------------|--|
| Account Status | Unlocked and Enabled |
| Dn | CN=Administrator,CN=Users,DC=testdomain,DC=com |
| Logon Name | Administrator |
| First Name | first name |
| Initials | initials |
| Lastname | lastname |
| Description | Built-in account for administering the computer/domain |
| Title | title |
| Department | department |
| City | city |
| Country | |

SambaBOX

Web Based
inspired from Gibux
Build for ALL

all you need for **DS +**
samba, dns, ntp, dhcp, saltstack

Community version
is on the way

SBX - DNS Management - Records

MAIN NAVIGATION

- Dashboard
- Health Monitor
- Directory Management >
- Orchestration >
- DNS Management
 - Zones
 - Records
 - Add Local Zone
 - Add Domain Zone
 - Add Record >
- DHCP Management >
- Date & Time Settings
- Service Management
- Troubleshooting >
- Sambabox Configuration >
- Domain Configuration >

RECORD LIST

Search:

| ZONE | HOST | TTL | TYPE | PRIORITY |
|----------------|---------------------------------|------|------|----------|
| testdomain.com | sambabox.testdomain.com. | 3600 | SOA | - |
| testdomain.com | win-e0fea408r68.testdomain.com. | 900 | NS | - |
| testdomain.com | sambabox.testdomain.com. | 900 | NS | - |
| testdomain.com | 10.211.55.5 | 600 | A | - |
| testdomain.com | 10.211.55.113 | 600 | A | - |
| testdomain.com | 10.211.55.5 | 600 | A | - |
| testdomain.com | 10.211.55.113 | 600 | A | - |
| testdomain.com | win-e0fea408r68.testdomain.com. | 600 | SRV | 0 |
| testdomain.com | sambabox.testdomain.com. | 600 | SRV | 0 |
| testdomain.com | win-e0fea408r68.testdomain.com. | 600 | SRV | 0 |
| testdomain.com | sambabox.testdomain.com. | 600 | SRV | 0 |
| testdomain.com | win-e0fea408r68.testdomain.com. | 600 | SRV | 0 |

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is on the way

SBX - Sambabox Configuration - Domain Configuration - GPO Synchronization

MAIN NAVIGATION

- Dashboard
- Health Monitor
- Directory Management

- Tree
- Users
- Groups
- Computers
- Organizational Units
- Replication
- GPO Synchronization
- Add User
- Add Group
- Add Organizational Unit

- Orchestration
- DNS Management
- DHCP Management
- Date & Time Settings

DOMAIN GPO SYNCHRONIZATION



WIN-E0FEA408R68

UPLOAD DOWNLOAD

Search:

DETAILS

SERIAL

{31B2F340-016D-11D2-945F-00C04FB984F9}

{6AC1786C-016F-11D2-945F-00C04FB984F9}

| | |
|-------------|---|
| GPO | {6AC1786C-016F-11D2-945F-00C04FB984F9} |
| Displayname | DefaultDomainControllersPolicy |
| Path | \\testdomain.com\sysvol\testdomain.com\Policies\{6AC1786C-016F-11D2-945F-00C04FB984F9} |
| Dn | CN={6AC1786C-016F-11D2-945F-00C04FB984F9},CN=Policies,CN=System,DC=testdomain,DC=com |
| Version | 2 |
| Flags | NONE |
| ACL | O:S-1-5-21-3306193365-4024945137-333524516-512G:S-1-5-21-3306193365-4024945137-333524516-512D:PAI(A;RPWPCCDCLLORCWOWDSW;;S-1-5-21-3306193365-4024945137-333524516-512)(A;CIIO;RPWPCCDCLLORCWOWDSW;DTSW;;S-1-5-21-3306193365-4024945137-333524516-512)(A;RPWPCCDCLLORCWOWDSW;;S- |

SambaBOX

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Build for ALL

all you need for **DS +**
samba, dns, ntp, dhcp, saltstack

Community version
is on the way

“**Time** exists in order that everything doesn't happen all at once... and **space** exists so that it doesn't all happen to you.”

Susan Sontag

Do you **need help?**

| | |
|---|--|
| Read wiki: wiki.samba.org | man |
| Mail Lists | Read The Fine Manual |
| samba.org/samba/docs | SerNET |
| Samba + | lists.samba.org |
| bugzilla.samba.org | debug samba |
| gitlab.com/samba-team/samba/ | |
| Catalyst | Google Microsoft |
| samba.org/samba/support | Git |

HUGE **thank you!** to SAMBA TEAM



May the force be with you!

Question

Thank **YOU**



SambaXP 2020

PROFELIS

www.profelis.com.tr
sambabox.profelis.com.tr

* All StarWars images are sourced at www.StarWars.com