



Improving the Stability of the Global Internet.

- Stefan Pattberg, Managing Director -



Agenda.

About us

Anycast and On-Boarding

Data Escrow and On-Boarding

Q&A

DENIC Services

Specialized service provider for the Domain Name Industry.

- **Anycast DNS**

- TOP3 DNS Anycast Provider for ccTLDs
- Every 10th domain in the world is supported by our infrastructure

- **Data Escrow**

- Sole Designated Data Escrow Agent for ICANN accredited Registrars
- Approved Data Escrow Agent for gTLDs
- Data Escrow Agent for regulated ccTLDs



Trusted Services for the Stability of the Global Internet

Secondary Anycast DNS

Enhances DNS performance and security with a distributed server approach.

Offers 100% availability, reduces latency and improves load times.

Important tool for mitigating DDoS attacks and ensuring resilience.

Data Escrow

Registration and other critical business data securely deposited with a trusted third party.

Ensuring availability and integrity for domain operators and domain holders, even in the event of unforeseen disruptions (e.g. bankruptcy, ransomware attacks, unrest, war...).

Pivotal service for trust, compliance and operational continuity.

anycast escrow

DENIC Backbone

DENIC Services GmbH & Co. KG A Fully Owned Subsidiary of DENIC eG

At DENIC Services, we're the commercial powerhouse within DENIC group, dedicated to enhancing and capitalizing on current solutions and technical infrastructures. Our focus extends beyond our core, driving added value in every endeavor.

DENIC eG is our DNS infrastructure partner

With 25+ years of experience in fail-safe operations of a global DNS network



17.6
Mio
.de

25+
Years

Not
for profit

anycast

**DDoS Protection &
Mitigation**

**Redundancy &
Load Balancing**

**Speed up
Response Time**

**100% Availability
Global Reach**

**Higher Reliability
Geo-Redundancy**

**Lower Latency
Less Attacks**

Global DNS network covering all continents

3

10

1

2

1

1

1

3

1

1

DNS Infrastructure

**100% reliability
and high capacity**

High total bandwidth:

Over 1.3 Tbit/s

Queries per second:

170,000 on Avg

Total capacity:

1.7m queries per second

Response times:

90% < 50ms

95% < 90ms

10%

of the global
internet is using
DENIC's DNS
infrastructure

35m+

Domains under
Management

On-Boarding Anycast DNS

I. Commercial negotiations

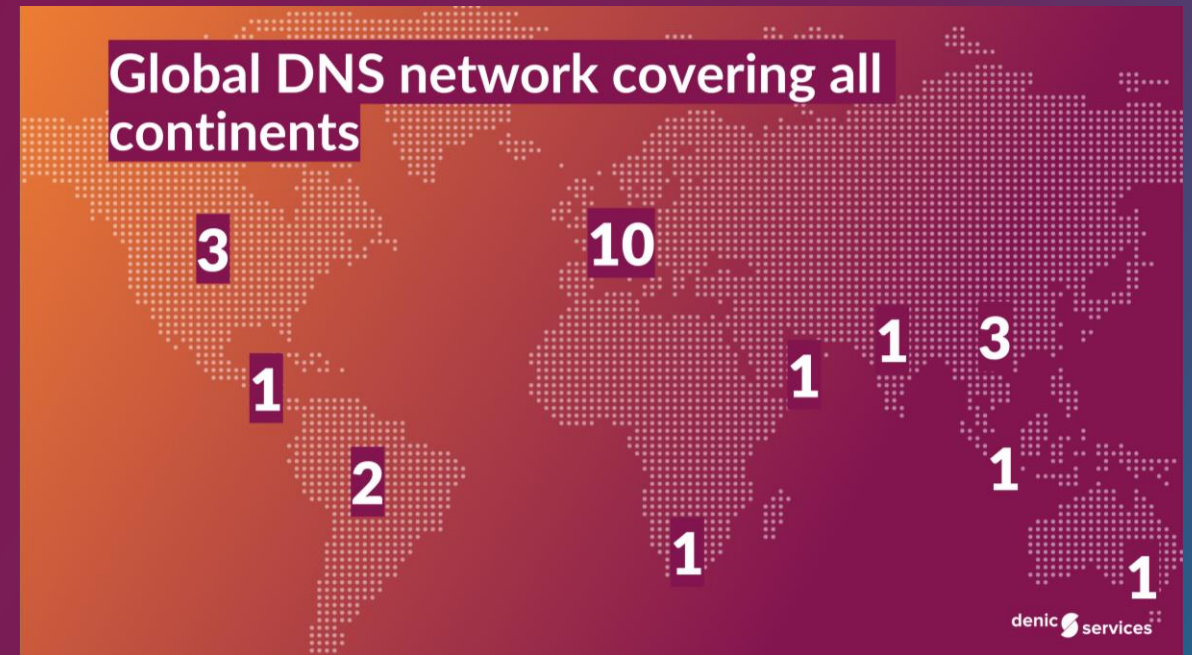
Choosing the right cloud (coverage) for the requested service.

Making sure that all security features are being met

- Availability,
- Geographical Redundancy,
- Usage of more than one Name Server Software,
- Capacity and Bandwidth,
- Round Trip Times,
- Real-Time-Monitoring,
- Max. Propagation Time,
- Backup and Restore of Zone Files.

Definition of Service Levels

- Response and/or Resolution Times,
- Service Reporting and Statistics,
- SLA Reporting,
- Self-Service-Portal.




On-Boarding Anycast DNS

II. Customer Details Form

Entering all administrative details in a simple form.

- Contract Data including contact details,
- Billing information and contact details,
- Maintenance contact.



DENIC Services Anycast DNS Customer Details
Please send the completed form to anycast@denic-services.de

Contract address


Customer name	
Street	
Postal code	
City	
Country	
Company Landline Phone	

Contract contact (admin)
The contract contact will be contacted in

Name	
Email	
Mobile Phone	

Contract legal represent
The contract contact will be contacted in

Name	
Email	
Mobile Phone	



Billing address (invoice recipient)

Company Name	
Name	
Street	
Postal code	
City	
Country	E.g. Germany
Email	
Value added tax identification number ("VATIN")	EU companies only

Billing contact (accounting representative)
The billing contact will be contacted in case of any billing related issue.

Name	
Email	
Mobile Phone	International Format please, e.g. +1 555 78945

Maintenance contact (daily operations)
The maintenance contact will be contacted in case of any maintenance information.


Name	
Email	
Mobile Phone	International Format please, e.g. +1 555 78945

On-Boarding Anycast DNS

III. Technical Details Form

Entering all technical details in same form.

- TLD information,
- Current DUM count,
- Total Zone size of all zones,
- DNSSEC,
- Requested Service Host Name,
- Primary DNS for Zone Transfer (IP addresses),
- Customer prefix and ASN (if available),
- Own Service Hosts (if own prefix),
- TSIG incl. algorithm,
- Zone update interval (in seconds),
- TCPDump sample requested.




Technical details	
TLD(s) (also SubDomains)	<input type="text" value="e.g.: .de, .com, .gov.uk"/>
Number of delegations (current DUM count)	<input type="text"/>
Total Zone size of all Zones in Mb (approximately ~Value)	<input type="text"/>
DNSSEC enabled	<input type="checkbox"/> YES
Requested Service Host Name	<input type="text"/>
Primary DNS for Zone Transfers (zone transfer from) please provide IPv4 & IPv6 address(es)) Note: Zone transfer is currently done on IPv4.	<input type="text"/>
Own prefix and ASN (Autonomous System Number)	<input type="checkbox"/> If enabled: Please provide your ASN # <small>Input of ASN is mandatory if own Prefix is enabled.</small>
Please note your Service Host(s) if own Prefix is enabled.	<input type="text"/> <small>Input of IPv4 + CIDR Prefix is mandatory. (Sample: 192.168.1.12/24) Input of IPv6 + CIDR Prefix is mandatory. (Sample: 2001:570:508::53/48)</small>
TSIG including algorithm and name, Base64 coded, HASH	<input type="text" value="TSIG Name"/> <input type="text" value="TSIG"/> <input type="text"/>
Zone Update Interval in seconds Warnings are sent to Technical Contact.	<input type="text" value="1- 60 seconds"/>
Send Warnings to technical contact?	<input type="checkbox"/> YES
Did you order the Hybrid cloud?	<input type="checkbox"/> YES
TCPDump sample Would you like to receive TCPDump each hour? Please note length of TCPDump 1-60 (Minutes)	<input type="checkbox"/> YES <input type="text" value="1- 60"/> <small>If Y is checked, INPUT Field possible Values 1 - 60</small>

On-Boarding Anycast DNS

III. Technical Details Form

Entering all technical details in same form.

- Parameters for setup and alarming,
- Technical Contact,
- Emergency Contact,
- Real-Time-View User (if booked),
- Requested Service Host Name,
- Additional information.



Parameters

Expected min. query rate q/s	<input type="text"/>
Expected max. query rate q/s	<input type="text"/>
Warning per email at q/s	<input type="text"/>

Technical contact (technical representative)
The Technical contact is responsible for technical details and will be contacted in case of any technical issue with no impact on the service.

Name	<input type="text"/>
Email	<input type="text"/>
Mobile Phone	<input type="text" value="International Format please, e.g. +1 555 78945"/>

Emergency contact (24/7/365)
The Emergency contact is responsible for technical issues and will be contacted in case of any issue that impacts the customers or our systems.

Name	<input type="text"/>
E-Mail	<input type="text"/>
Mobile Phone	<input type="text" value="International Format please, e.g. +1 555 78945"/>

Realtime View User
If you've ordered Realtime View: Please give one Person who should have initial access to the Realtime View Portal.

Did you order Realtime View with additional cost?	<input type="checkbox"/> YES
Name	<input type="text"/>
E-Mail	<input type="text"/>
Mobile Phone	<input type="text" value="International Format please, e.g. +1 555 78945"/>

Anything else, you want to mention?	<input type="checkbox"/> YES
Additional Note	<input type="text"/>

On-Boarding Anycast DNS

IV. Technical Setup

Anycast Service Provider

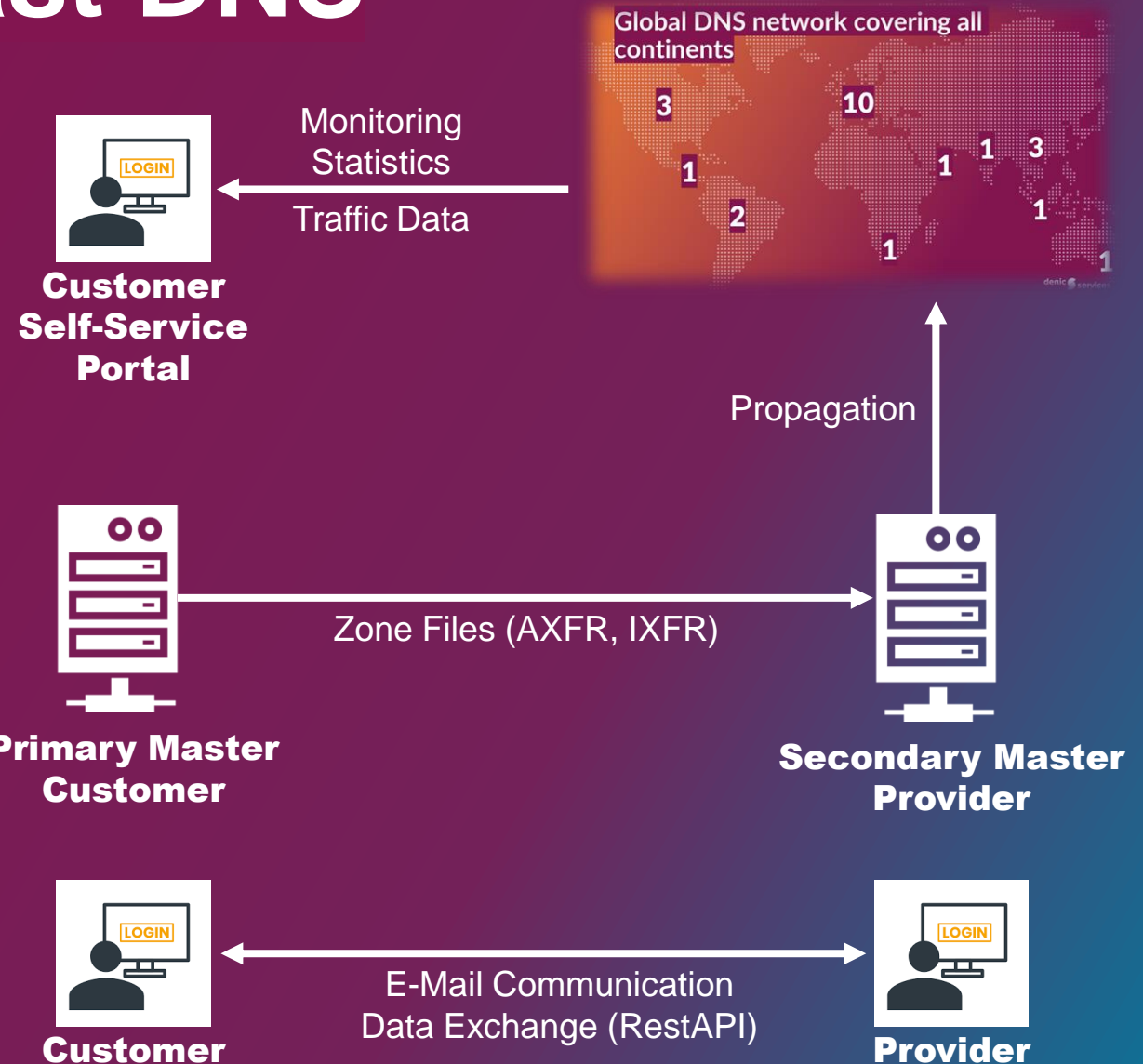
- Configuring Names Servers for new zones,
- Preparing Secondary DNS Master for receiving new zone files,
- Setting up Customer Self Service Portal and Real-Time-View-Monitoring (if booked),
- Delivering credentials to customer.

Customer

- Setting Primary DNS Master for delivering Zone Files to Secondary DNS Master,
- Starting to deliver Zone Files (AXFR, IXFR) to Secondary DNS Master.

Anycast Service Provider

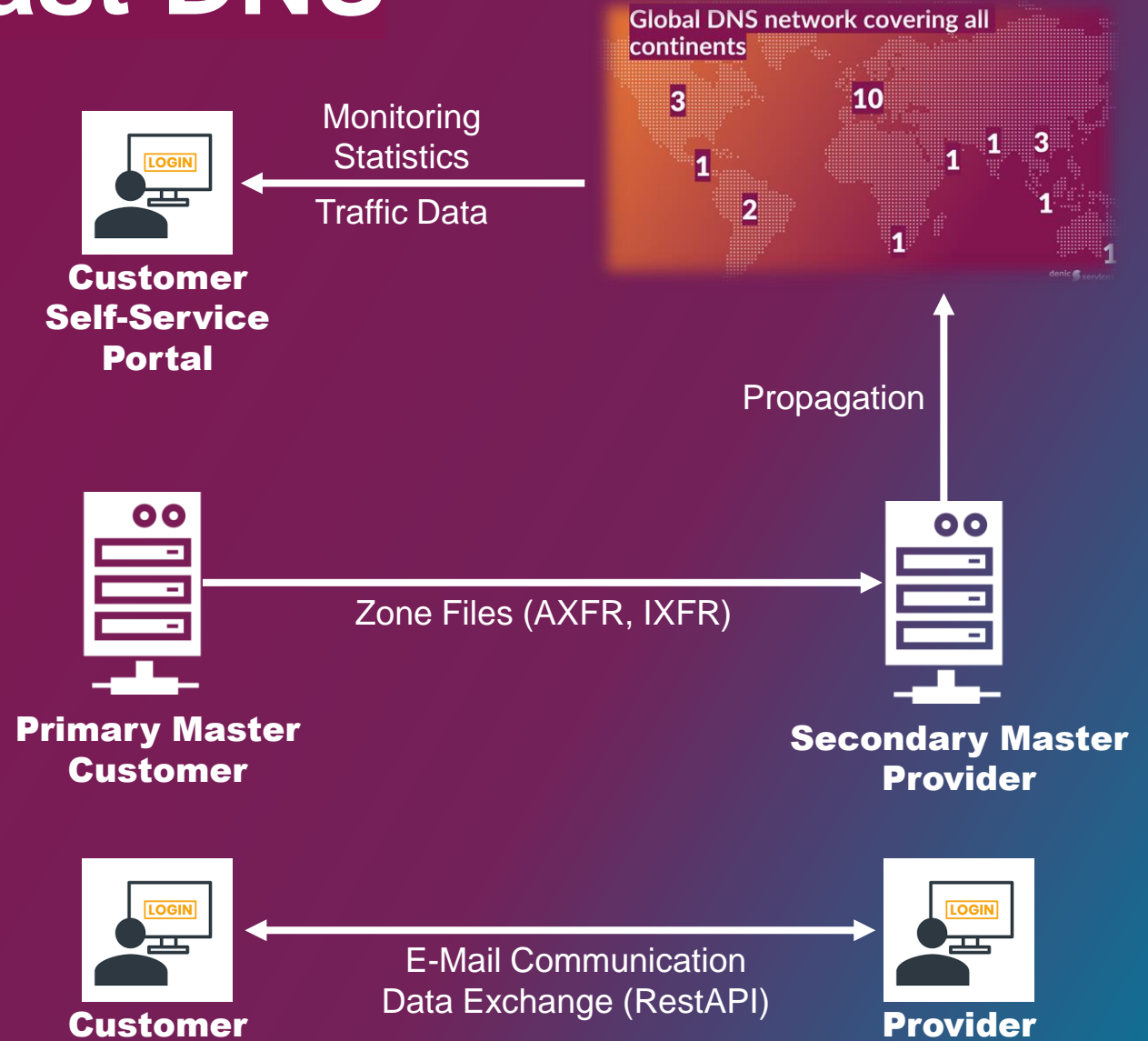
- Starting Propagation to Name Servers.



On-Boarding Anycast DNS

Summary

- Filling out the On-Boarding form
 - Entering 47 fields
 - Making 5 choices
- Configuring the own Primary DNS Master
- Starting sending Zone Files (AXFR, IXFR)



Data Escrow

Trust anchor in the R-R-R model

Registration Data is a critical business asset.

Different roles in the multi-stakeholder model have different interests in this data.

Registrant / Domain Holder owns the data and has vital interests.

- Domain should always be available and accessible.
- Personal data needs to be protected against misuse.

Registrar owns the customer relationship.

- Wants the asset to be safe.
- Needs a business continuity solution in case of failure or attacks.
- Wants to proof high standards in data security and stability to registrants.

Registry Operator

- Needs a business continuity solution in case of a registrar is failing.
- Wants to proof high standards in data security and stability to registrars.
- May need to be compliant with requirements from governments or regulators.

The independent Data Escrow Agent establishes and keeps the trust between all parties involved.



Data Escrow

Registrar Data Escrow

ICANN program to ensure the stability of the DNS by having a business continuity solution for the case of one or more registrars not being able to comply to the requirements of their accreditation.

ICANN designates **global Data Escrow Agent(s)** for all accredited registrars.

DENIC Services is the sole Designated Data Escrow Agent for ICANN accredited registrars since 2024.

Registrars can choose between GDPR-compliant Data Escrow in EU, based on DENIC infrastructure, or Data Escrow in US, based on AWS infrastructure.

2/3 of all domains in the world are expected to be protected by Registrar Data Escrow from DENIC Services by year end.



Data Escrow

Registry Data Escrow

ICANN program to ensure the stability of the DNS by having a business continuity solution in case one or more Registry Operators not being able to comply to the requirements of their accreditation.

Program chosen by other regulators to have a business continuity solution in place in case of a failing ccTLD Registry Operator.

Registries can choose between GDPR-compliant Data Escrow in EU, based on DENIC infrastructure, or Data Escrow in US, based on AWS infrastructure.

50%+ of all domains in the world are expected to be protected by Registry Data Escrow from DENIC Services by year end.



.zadna

Five Steps to On-board

1. Welcome Email
2. Contractual Self-Onboarding in Control Center
3. Online signing of RyDE Agreement
4. Technical On-Boarding
5. Upload and validation of First Deposit

RyDE On-Boarding Process

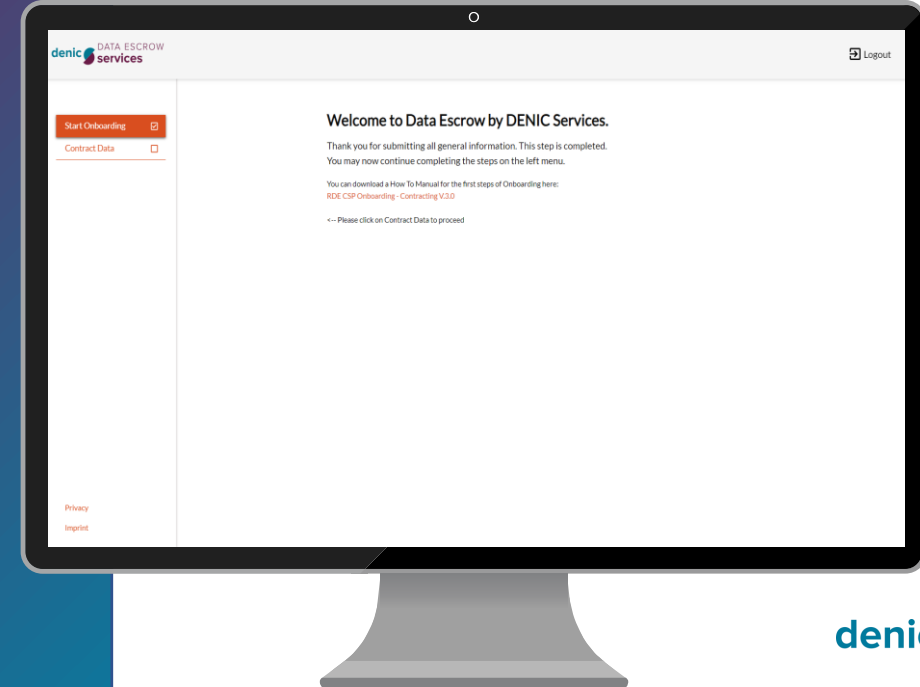
Easy & online

1. Welcome Email

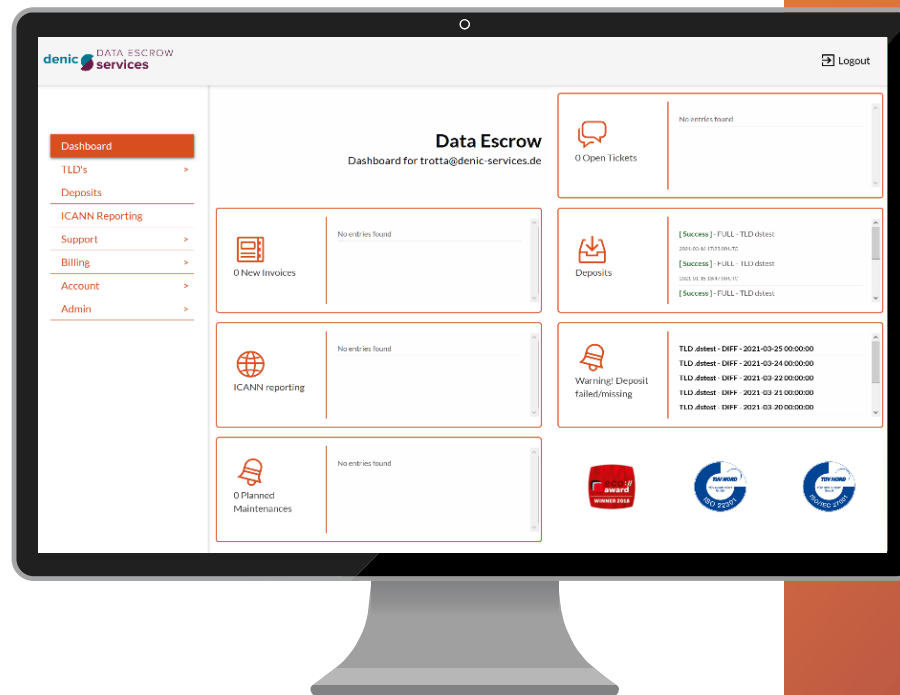
- i. A User Account for the Data Escrow Control Center (CC) will be created for the Customer Admin.
- ii. Customer Relationship Management System sends automatically “Welcome email” to Customer Admin with personal link to CC.
- iii. Customer Admin sets password with 2FA (OTP via text message or Authenticator software).
- iv. Welcome screen and start of contractual on-boarding.

RyDE On-Boarding Process

Easy & online



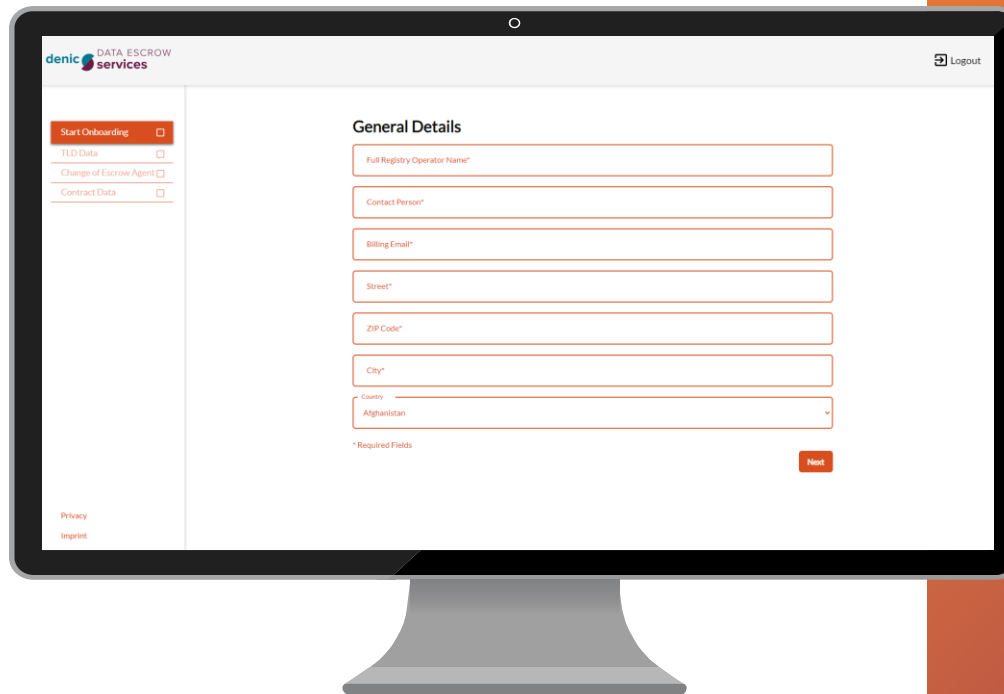
RyDE Control Center



Features:

- **Onboarding** section to exchange securely all relevant information
- **Dashboard** to get an instant overview about the status of all ongoing processes
- **Access to the Ticketing System**
- **Admin section** to manage all users of an organization and grant/revoke access rights
- **Daily Operations**
 - Deposit Verification results
 - Information to remedy failures
 - Notifications and reports
- **Contact details**
 - Contracting contact
 - Emergency contact
 - Addresses
 - Keys and credentials
- **Download section** for relevant Data Escrow Documents

RyDE Control Center

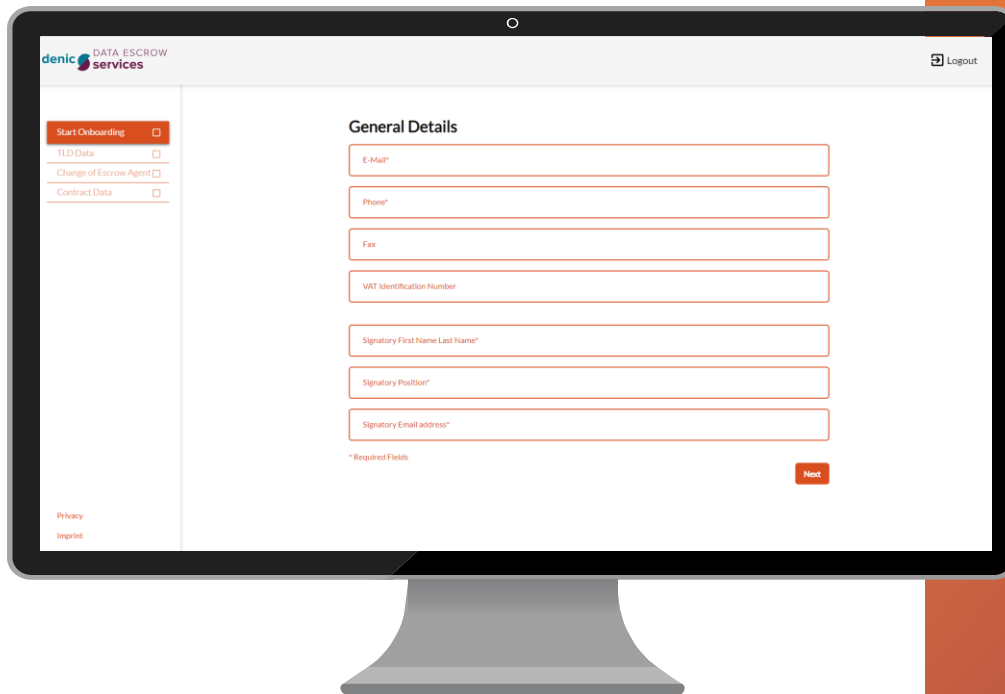


The screenshot shows a web browser displaying the 'General Details' form in the RyDE Control Center. The page header includes the 'denic DATA ESCROW services' logo and a 'Logout' link. A left sidebar contains a 'Start Onboarding' button and three expandable sections: 'TLD Data', 'Change of Escrow Agent', and 'Contract Data'. The main content area is titled 'General Details' and contains several input fields, all marked with an asterisk to indicate they are required. The fields are: 'Full Registry Operator Name*', 'Contact Person*', 'Billing Email*', 'Street*', 'ZIP Code*', 'City*', and 'Country' (a dropdown menu currently showing 'Afghanistan'). A 'Next' button is located at the bottom right of the form. At the bottom left of the page, there are links for 'Privacy' and 'Imprint'. A small note at the bottom left of the form area states '* Required Fields'.

2. Contractual Self-On-Boarding:

- Entering the General Details needed to establish the contractual relationship
 - Full Registry Operator Name
 - Name of Contact Person
 - Billing E-Mail
 - Street
 - ZIP Code
 - City
 - Country

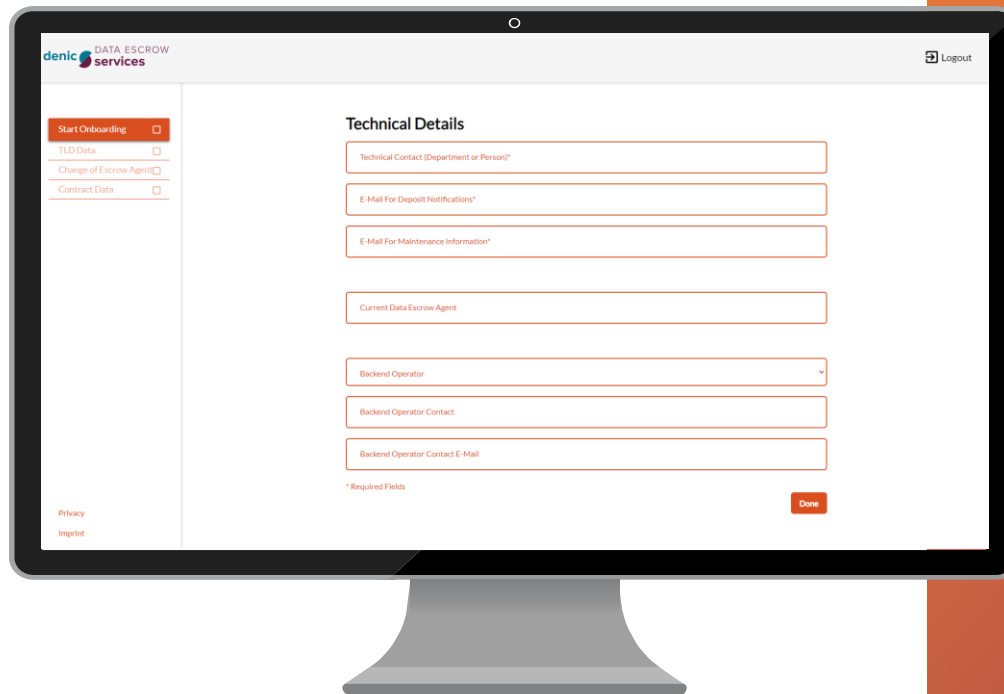
RyDE Control Center



2. Contractual Self-On-Boarding:

- Entering the General Details needed to establish the contractual relationship
 - Company E-Mail
 - Phone
 - Fax
 - VAT Identification Number
 - Signatory Name (First and Last Name)
 - Signatory Position
 - Signatory E-Mail Address

RyDE Control Center



The screenshot shows a web browser displaying the 'denic DATA ESCROW services' interface. On the left is a sidebar with links: 'Start Onboarding' (highlighted in orange), 'TLD Data', 'Change of Escrow Agent', and 'Contract Data'. The main content area is titled 'Technical Details' and contains several input fields: 'Technical Contact (Department or Person)*', 'E-Mail For Deposit Notifications*', 'E-Mail For Maintenance Information*', 'Current Data Escrow Agent', 'Backend Operator' (a dropdown menu), 'Backend Operator Contact', and 'Backend Operator Contact E-Mail'. A 'Done' button is at the bottom right of the form. At the bottom left of the page, there are links for 'Privacy' and 'Imprint'. A small asterisk note indicates '* Required Fields'.

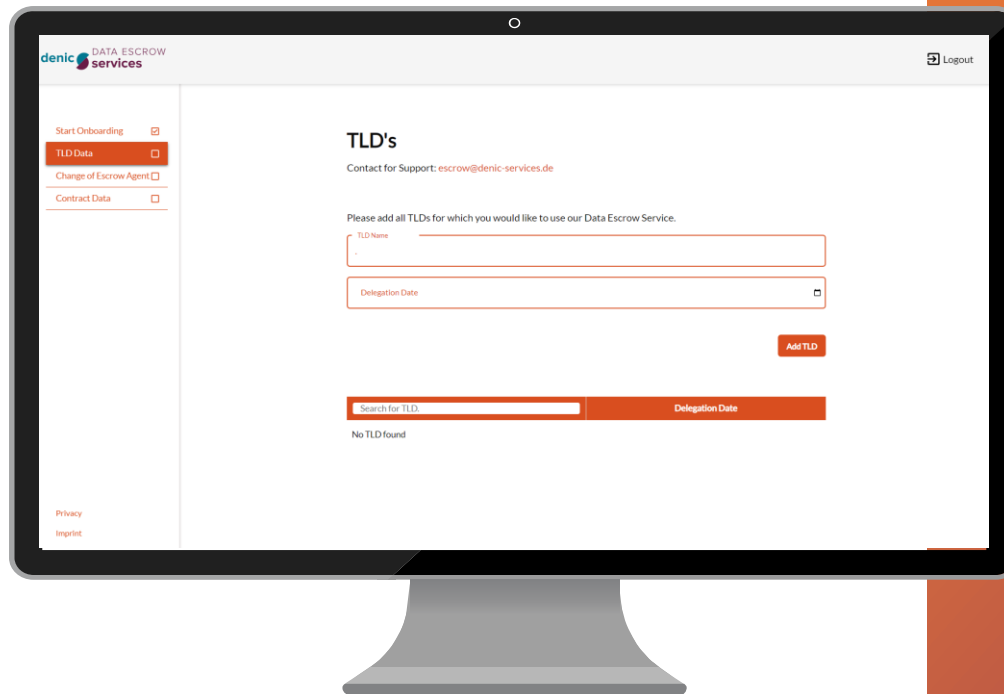
2. Contractual Self-On-Boarding:

- Entering the Technical Details needed to establish the contractual relationship
 - Name of Technical Contact
 - E-Mail for Deposit Notification
 - E-Mail for Maintenance Information
 - Current Data Escrow Agent (if transition)
 - Registry Service Provider (RSP)
 - Name of RSP contact
 - RSP contact E-Mail Address

RyDE Control Center

2. Contractual Self-On-Boarding:

- Entering the details for each TLD being covered by the contract
 - TLD name
 - Date of delegation

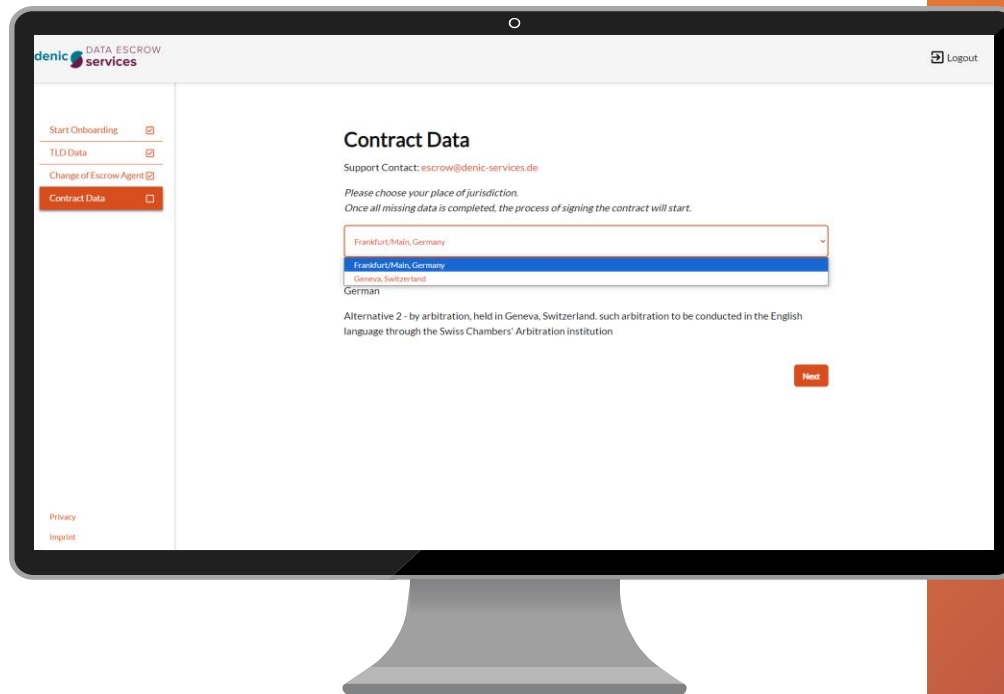


The screenshot displays the 'denic DATA ESCROW services' web interface. On the left, a sidebar contains navigation links: 'Start Onboarding', 'TLD Data' (highlighted), 'Change of Escrow Agent', and 'Contract Data'. The main content area is titled 'TLD's' and includes the contact information 'Contact for Support: escrow@denic-services.de'. Below this, a message states 'Please add all TLDs for which you would like to use our Data Escrow Service.' The form consists of two input fields: 'TLD Name' and 'Delegation Date', followed by an 'Add TLD' button. At the bottom, there is a table with two columns: 'Search for TLD' and 'Delegation Date'. The table currently shows 'No TLD found'. In the bottom left corner, there are links for 'Privacy' and 'Imprint'. A 'Logout' link is located in the top right corner of the header.

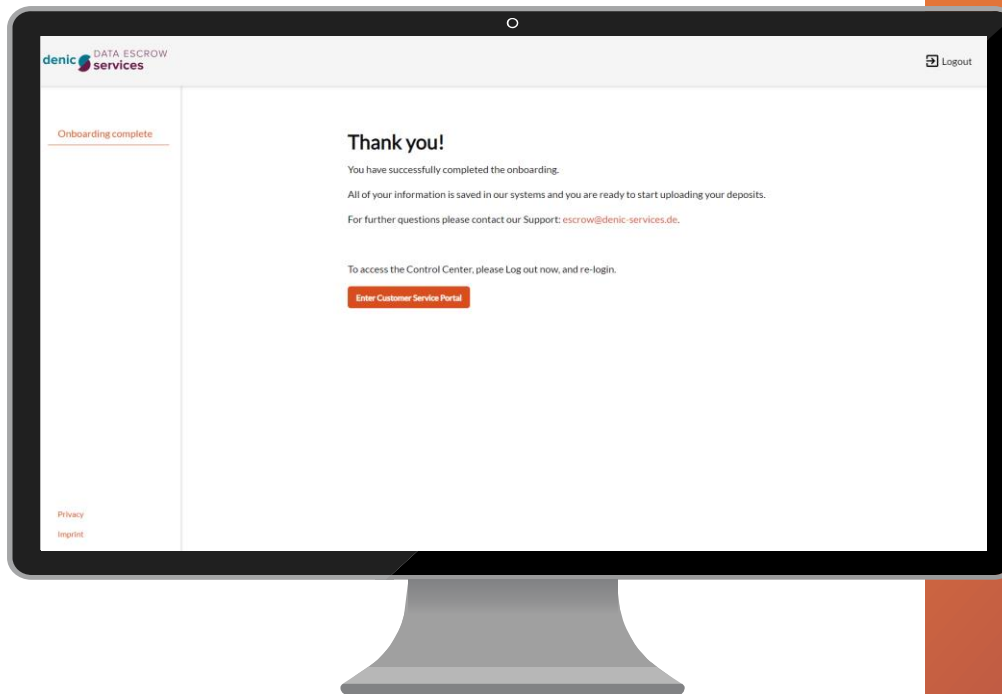
RyDE Control Center

2. Contractual Self-On-Boarding:

- Choosing the place of jurisdiction
 - Frankfurt/Main, Germany
 - Geneva, Switzerland



RyDE Control Center



2. Contractual Self-On-Boarding:

- Self-On-Boarding is completed
 - 1 password to set
 - 1 OTP to enter
 - 23 fields to enter
 - 1 choice to make
- Process control is switched to DocuSign

3. Online signing of RyDE Agreement

- i. Control Center provides pre-filled RyDE agreement to DocuSign.
- ii. Data Escrow Agent signs RyDE agreement using DocuSign.
- iii. Registry Operator signs RyDE agreement using DocuSign.
- iv. DocuSign delivers signed versions of the RyDE agreement to the Registry Operator and Data Escrow Agent.
- v. If needed, Notification of Compliance and Data Escrow Certificate are being sent to Beneficiary using DocuSign.
- vi. If ICANN is involved, Registry Operator must upload
 - a. the RyDE agreement and
 - b. the Notification of Complianceto the Naming Services Portal.

RyDE On-Boarding Process

Easy & online



4. Technical On-Boarding

- i. CRM sends automatically Email to Registry Services Provider that new Registry Operator wants to switch to DENIC Services
- ii. RSP enters technical details into Control Center, if not already delivered
 - a. RSP's public PGP Key for validation of deposit signature
 - b. RSP's SSH Key
- iii. Control Center provides all upload details to RSP
 - a. URL of SFTP server
 - b. DEA's public PGP Key for deposit encryption

RyDE On-Boarding Process

Easy & online

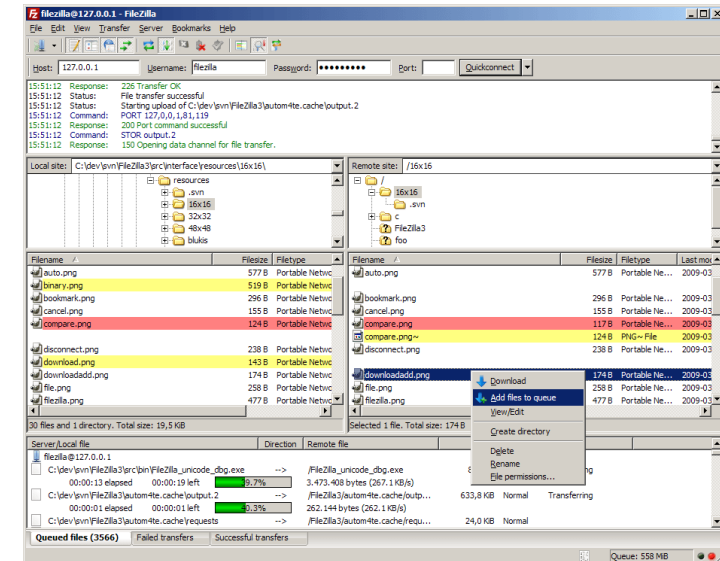
[illegible]

5. Upload and validation of 1st Deposit

- i. RSP uploads encrypted and signed deposit to the SFTP server
- ii. Data Escrow Validator checks integrity and compliance of the deposit
- iii. Emails with “Success” or “Fail” information are sent out to Registry Operator and RSP
- iv. In case that the deposit status is “Success”, DEA informs the Beneficiary about the readiness to start daily reporting

RyDE On-Boarding Process

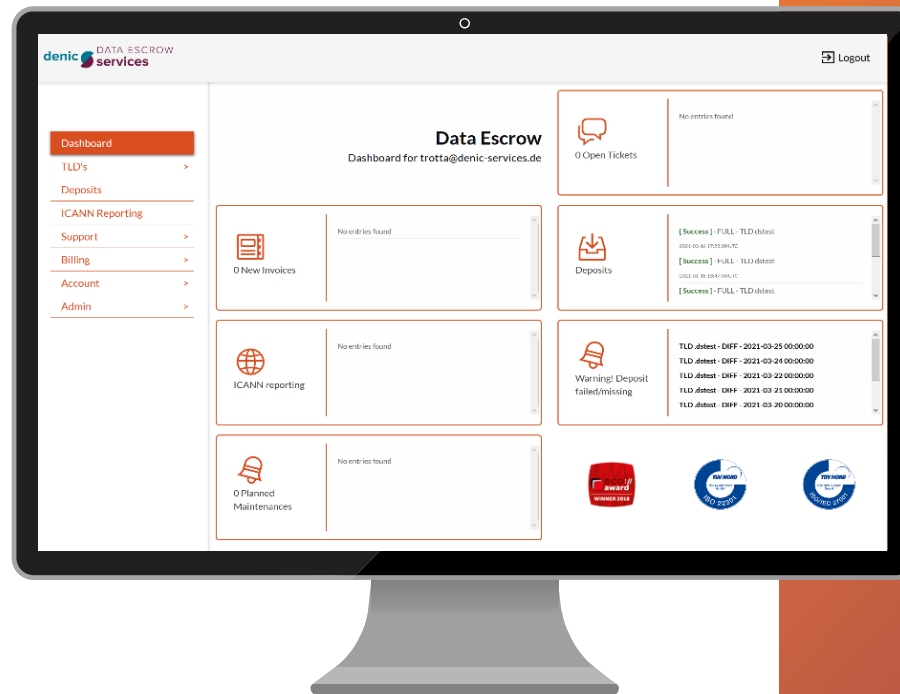
Easy & online



Data Escrow Control Center

On-Boarding is completed

- Customer Admin gets access to the dashboard with all daily-business features
 - Deposit Status and Reporting
 - Warnings
 - Ticketing System
 - Billing data
 - Maintenance information
 - User Management



**We're not just a service provider.
We're your gateway to global reach and
digital security.**

**Partnering with us improves the stability
for your own business and finally for the
global internet.**



**We protect
your business.**

denic  services

”

Expedited responses and absolute professionalism coupled with emotional intelligence are expectations that have become synonymous with their engagement with us.“

Simla Bundu

ZACR

Thank you!

Thank you!

Contact Information

DENIC Services GmbH & Co. KG
Heinrich-Hertz-Str. 5
64295 Darmstadt, Germany

+49 6151 6290 940
info@denic-services.de

www.denic-services.de