

Govt. of Maharashtra Trusts ESDS to Digitalize the Registration and Land Record Processes via its Highly Secure eNlight WebVPN



About Revenue Dept. – Govt. of Maharashtra & its Digital India Land Record Modernization Programme

Functions of the Department:

The following are the functions of the Department of Land Resources:

1. Implementation of a watershed programme for the development of rainfed/ degraded areas.
2. Guide and facilitate States to modernize land record management & build up a land information system.
3. Administration of Land Acquisition Act, 1894 (1 of 1894) and right to fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act, 2013 and matters relating to the acquisition of land for purposes of the Union and Registration Act, 1908
4. To facilitate the adoption of a policy for Rehabilitation & Resettlement of displaced people.



About Revenue Dept.

Objectives of the Department:

The main objectives of the Department are:

1. To increase the productivity of rainfed/degraded land through the process of integrated watershed management;
2. To support the States/UTs for implementation of Digital Land Records Modernization Programme (DLRMP) to achieve a comprehensive land governance system known as the Integrated Land Information Management System;
3. To administer land reforms and other related matters relating to land such as administration of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013(RFCTLARR), the National Rehabilitation and Resettlement Policy of 2007, the Registration Act, 1908, etc.

LR and IGR (Revenue Department, Government of Maharashtra)

It is Maharashtra Government's Revenue Department, which handles LR (Land Records) and IGR (Inspector General of Registration). The Land Reforms (LR) Division was implementing two Centrally Sponsored Schemes viz.: Computerization of Land Records (CLR) & Strengthening of Revenue Administration and Updating of Land Records (SRA&ULR). Later on 21.8.2008, the Cabinet approved the merger of these schemes into a modified Scheme named Digital India Land Records Modernization Programme (DILRMP). The main focus of DILRMP are to usher in a system of updated land records, automated and automatic mutation, integration between textual and spatial records, inter-connectivity between revenue and registration, to replace the present deeds registration and presumptive title system with that of conclusive titling with title guarantee.

The DILRMP has 3 major components - (a) Computerization of land record (b) Survey/re-survey (c) Computerization of Registration. The District has been taken as the unit of implementation, where all programme activities are to converge. It is hoped that all districts in the country would be covered by the end of the 12th Plan period except where cadastral surveys are being done for the first time.



Challenges & Needs

The Revenue Department of Maharashtra was facing many problems due to the old-age methodology of carrying out the work. When using VPNs for the LR and IGR projects, they had to repeatedly install a client software in their computer and then work on it. This was tedious and time-consuming. Revenue dept. wanted secure remote access for applications to all the officials across Maharashtra. They were working in 36 districts, 358 sub-districts, and 43,722 village-level offices, which needed to connect to access the required web portals for land record related services. The need was to have connectivity irrespective of the device and location.

The officials didn't want to use client-based VPN technology for over 15,000 users, which would keep growing over time. Revenue dept. officials were facing several performance issues like server speed and accessibility over the old client-based VPN.

The officials of the Revenue dept. wanted to have –

- A real-time traffic analysis dashboard with detailed information e.g. the number of live users district wise and zone wise.
- A highly secure network application on GCC (Government Community Cloud) and Information Security for end-users and application data.
- A highly scalable WebVPN solution to handle the load of 36 districts 43,722 villages, and over 15,000 users.
- A cost-effective solution as other CSP's proposed a humongous cost for a client-less VPN solution.
- A digital solution that can improve the experience of officials and the general public.



Digital Solution Provided by ESDS

ESDS provided the Revenue dept. a remote access solution – ESDS eNlight WebVPN, which is a clientless SSL VPN and a software-defined solution that provides multi-layered security for the government applications and data hosted on ESDS' GCC (Government Community Cloud). The WebVPN operates on standard web browsers. It enabled Revenue dept. officials to securely access the portal, its applications, and connect with other officials; thus, eliminating the need for complex client-based IPsec and SSL VPNs.

- ESDS eNlight WebVPN is the first client-less SSL VPN solution with built-in WAF (Web Application Firewall) for multi-layer security, incoming TCP load-balancer (self-LB), and proxy balancer (backend server LB) that provides high performance using powerful multi-layered load-balancing with cross-platform support to LR applications.
- ESDS eNlight WebVPN also supports the global multi-site cluster between ESDS' different data centers. The appliances can cluster to support up to 15,000 concurrent user connections on a single URL, without any impact on performance. Also, WebVPN can be configured to tackle hot failover between horizontally scalable multiple servers (an active-active or an active-standby server), without session interruption or termination. It is also possible to add servers on the fly

in WebVPN's cluster to handle huge bursts of traffic. So, even if an unlikely event of a server failure happens, all the session data is still preserved and the background process of failover to the back-up unit is seamless for the user.

- The LR project administrators can easily view real-time traffic with the number of live users (district wise and zone wise) on the dashboard. ESDS eNlight WebVPN's central management dashboard makes it easy for administrators to add applications on ESDS eNlight WebVPN. It provides accessibility, security reporting, system plus network status, and customizable ESDS eNlight WebVPN portal templates. Besides, ESDS has provided them with SSO (Single Sign-On) feature that helps to ease their process.
- LR applications are protected through ESDS eNlight WebVPN's following features for multi-layer security –
 - Built-in WAF rules
 - Security Policies
 - Access control
 - Scoring Policy
 - The Log Analyzer for SIEM
 - Source IP Reputation Analysis
 - CERTin certified, VAPT compliant, and MeitY compliant



Digital Solution Provided by ESDS

Qualified, customizable, and ready-to-use rule sets are integrated by default in the ESDS eNlight WebVPN. Also, the LR applications are protected against OWASP Top 10 vulnerabilities. Functionalities such as automatic import, versioning rule sets, graphical interface to edit the rules, and an assistant for writing rules that makes the work easy for administrators are provided.

- Several authentication services are integrated with the ESDS eNlight WebVPN.
- Two-factor authentication is enabled via OTP on SMS and email. WebVPN offers LDAP, Active Directory (AD), Kerberos, SQL, Radius, and OAuth2.0 for user authentication and authorization. ESDS eNlight

WebVPN provides built-in support for two-factor authentication methods (such as SMS/email-based token, Google, Microsoft and other TOTP Authenticator etc.).

- The clientless solution we made is cost-efficient and the Revenue dept. will save close to 30 Crores with ESDS eNlight WebVPN over a period of next 5 years. The end-users have experienced high performance with low latency and a minimal number of VPN issues. 114.2 Million Maharashtra state citizens and out of that 15.3 Million farmers are quickly getting digitally signed documents for their lands. Out of 25.2 Million, 19.0 Million land record documents are digitally signed after migrating to ESDS' GCC (Government Community Cloud) with ESDS eNlight WebVPN.

BENEFITS

Benefits Enjoyed by the Client

Operational Impact

- Web portal's performance and speed improved
- The experience of end-users (Revenue Dept.'s Officials) and citizens got enhanced. Citizens are now getting digitally signed land records without any hassles.
- Server downtime incidents got decreased
- The Revenue dept.'s revenue increased as they can now quickly handle the cases and provide digitally-signed land records
- ESDS eNlight WebVPN handles around 10 million requests per day

Quantitative Benefit

- Cost-saving of Rs. 45 lakhs per month (~30 Cr over 5 years) for the Revenue dept.
- 90% of land records got digitally signed in just 3 months
- They can handle the upcoming data of over 15 K users swiftly
- By delivering digitally signed land records to citizens via ESDS eNlight WebVPN, over Rs. 32 Crore revenue got generated by now.
- Their ranking elevated under the category of "Ease of Doing Business" based on which the World Bank was going to provide them with major funding.

“ESDS was successful in solving all the critical issues of the client. They wanted an immediate implementation, which we delivered covering all the points mentioned.”

A highly scalable ESDS eNlight WebVPN handle the load of 36 districts and 43,722 villages, with over 15,000 users.



About ESDS

Born with a global mind-set, ESDS began its operations from the Tier2 city of Nashik (India) in 2005 and presently has its footprint in 19 nations across APAC, Europe, Middle East, Americas and Africa. ESDS acts as a catalyst of digital transformation in the modern outcome-based economy by enabling organizations to embrace advanced technologies.

At ESDS, we believe in creating lifetime relationships and fostering a culture of co-existence by uniting minds that are passionate about delivering innovative solutions and

exuberant customer experience. More than 750 organizations, backed by a committed workforce at ESDS, have successfully achieved their business objectives.

ESDS eNlight WebVPN Solution for the Revenue Dept. under Govt. of Maharashtra

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