

essendi xc ACME-Adapter

Automated certificate management with ACME

essendi xc is a comprehensive management system with a company-wide repository for various certificates and certificate types. It covers the entire certificate life cycle from application to installation. This means that all certificate stocks remain in focus at all times, including those that are automatically issued and distributed via ACME (see below for details). essendi xc simplifies certificate processes and enables individually definable automation of workflows, e.g. for validation, issuance and renewal of certificates.

TLS, ACME and Let's Encrypt

Digital certificates in conjunction with SSL/TLS have become established for setting up an encrypted connection to a website. The certificate authority Let's Encrypt has established itself for the simple and free issuance of SSL/TLS certificates using ACME.

The ACME protocol (Automatic Certificate Management Environment RFC8555) was created to enable Let's Encrypt to check the ownership of a domain quickly and automatically. ACME reduces the effort involved in issuing a certificate for both the end user and the certification body. The associated tools are widely used and mostly open source. They support the automation of domain validation and also the installation of certificates in the web server.

Automated certificate management in organisations

As the number of digital certificates increases with ever shorter validity periods, the administrative workload in companies increases. Unregulated processes and responsibilities increase the risk of unintentionally expiring certificates leading to operational disruptions or system failures.

Certificate management solutions and automation offer the following advantages:

- > Centralised overview and control of certificates in the company
- > Ensuring compliance requirements
- > Manage and settle multiple CAs
- > Quick and easy issuance, installation and renewal of SSL/TLS certificates
- > Secure storage of sensitive key material

essendi it has faced up to these challenges and developed **essendi xc**, an innovative and powerful platform for managing digital certificates.

ACME-based client tools such as Certbot allow complete automation of the issuance of SSL/TLS certificates for a web server. This makes it possible to fully automate the installation of certificates received in the familiar web servers such as nginx, Apache and IIS. Administrators particularly appreciate the additional advantage that manual intervention is no longer necessary, even when renewing a certificate.

The limits of the Let's Encrypt certification authority

If the requirements for TLS certificates go beyond domain validation, certificates from Let's Encrypt are not suitable. Neither organisation validation nor other certificate types, such as those required for signing e-mails, documents and code, are available. Other CAs must therefore be consulted for this purpose.



How do you maintain an overview and control over these certificates, which are managed largely automatically and without the involvement of the PKI/security administration? How do you combine the handling of the various CAs behind it?



Greater reach of ACME and Let's Encrypt with the essendi xc ACME adapter

The ACME adapter from essendi xc comprehensively extends the possibilities of ACME.

The xc ACME adapter combines all the advantages of an ACME client such as Certbot (automation, renewal of certificates and distribution to various target environments, etc.) with the benefits of the professional certificate management platform essendi xc (expansion of the range of certification authorities and certificate types of all kinds, etc.).

ACME clients such as Certbot can request and manage web server certificates fully automatically in combination with the essendi xc ACME Adapter and essendi xc. The essendi xc ACME Adapter supports the challenge types DNS and HTTP.

In addition to the functionalities of essendi xc for monitoring and managing certificates,

various Certificate Authorities can be connected. This multi-CA capability of essendi xc offers the possibility to request certificates from any Certificate Authorities via the ACME protocol. A large number of public and private certificate providers are already connected to the xc. Examples include D-Trust, DigiCert, GlobalSign, PSW-Group, SwissSign and the Microsoft PKI. The integration of further certification authorities is possible.

Many servers and components in the internal network may not establish a connection to the open Internet. This means that connectivity between an ACME client and the Let's Encrypt CA is not possible. With the essendi xc-ACME adapter as an internal ACME server, you can also supply internal ACME clients with certificates.

Your advantages at a glance

ACME and essendi xc are even more powerful in combination and offer the following features:

- > High degree of automation and use of known and accepted procedures for certificate requests
- > All certificates in essendi xc are monitored and are under centralised control in the repository.
- > Certificates can be revoked from within essendi xc.
- > Certificate Authorities can be freely selected due to the multi-CA capability of essendi xc. If required, it is easy to change the Certificate Authority.
- > The usage profile of certificates can be extended with additional attributes, e.g. in the subject.
- > Certificates enriched in this way enable organisational assignment, grouping and validation.
- > essendi xc ensures that the digital certificates fulfil your compliance requirements.

In addition to ACME, possible areas of application for essendi xc include the automation of web server certificates, the entire Internet of Things environment, cloud environments (e.g. in conjunction with Docker) and email communication.

Please contact us for a live demo.

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