

LANCOM™ Techpaper

Characteristics of LANCOM CC Routers

Introduction

Operating networks that contain sensitive data requires a considerable amount of trust in the network security technology. The LANCOM CC routers are specifically designed for environments where the use of certified products is stipulated or where significantly increased security requirements apply. This Techpaper is an aid to decision makers in that it provides information on the certification of the LANCOM Operating System (LCOS) according to the Common Criteria For Information Technology Security Evaluation standard, otherwise known as Common Criteria or CC for short. This document also explains the differences between the LANCOM CC routers and standard LANCOM VPN routers.

Common Criteria

Common Criteria is an international standard for the certification of hardware and software with regard to data security. It is important to note that the certification does not necessarily relate to an entire product; it may apply to individual components only, such as a router firewall. The Security Target defines the security characteristics that the product must exactly fulfill. CC certification is available for different Evaluation Assurance Levels (EAL), which clarify the depth and extent of an evaluation. There are seven different EALs, each of which builds on the previous level by extension or by the addition of new components. A system is generally certified to a particular level, while individual components can be augmented with the requirements of a higher level (but not of a lower level).

The evaluation is carried out by a suitably qualified laboratory. In Germany, the test report is assessed by the Federal Office for Information Security (BSI), which then issues the certification. The requirements to be fulfilled are divided into different

classes: Development, documentation, support over the system lifetime, evaluation of the security target, testing, and the assessment of vulnerability. EAL 4, with the possibility of extensions, is the highest level of certification for commercial network products. The difference between EAL 3 and EAL 4 is an assessment of the system's implementation, which is only carried out for EAL 4.

LCOS 8.70 CC

The LANCOM operating system LCOS 8.70 CC provides the basis for highly secure operations. Due to the extensive certification of the LCOS features, LANCOM CC routers fulfill all of the aspects required for highly secure site connectivity. However, the functionality in certified CC mode is reduced in certain areas when compared to standard LANCOM VPN routers. Table 1 lists the main differences with regard to the available protocols. The differences between functions and characteristics are listed in table 2.

LCOS 8.70 CC can only be operated with LANCOM routers that are explicitly designed to use it. They can be set to the certified CC mode on the command line once the corresponding firmware has been installed. If the device is set to certified CC mode, all non-certified features are disabled. If one of these



functions is activated again, the device is no longer operating in conformance with the certification. Whether or not a device is currently operating in certified CC mode can be queried via the command line.

| Function | LANCOM CC routers | LANCOM VPN routers |
|-------------------------|-------------------|--------------------|
| IPSec | ■ | ■ |
| IPSec-over-HTTPS | □ | ■ |
| AES | ■ | ■ |
| DES, 3DES | □ | ■ |
| TELNET | □ | ■ |
| TFTP | □ | ■ |
| SSHv2 | ■ | ■ |
| HTTP / HTTPS | □ | ■ |
| SYSLOG (internal) | ■ | ■ |
| SYSLOG (external) | □ | ■ |
| SNMP | □ | ■ |
| DynamicDNS | □ | ■ |
| Content Filter | □ | ■ |
| ISDN / LANCAPI | □ | ■ |
| External USB interfaces | □ | ■ |
| COM-port server | □ | ■ |
| WEBconfig | □ | ■ |
| Serial configuration | ■ | ■ |

Table 1: Functional differences

Security Made in Germany

Another important aspect is the background of LANCOM as a company. LANCOM Systems GmbH is a German company under German ownership and management, and as such it is not subject to the law or the influence of other states which demand the installation of backdoors or allow the recording of unencrypted data. LANCOM is committed to developing products that contain neither backdoors nor vulnerable encryption algorithms. To ensure that this remains so, the operating system LCOS and the devices are developed and manufactured in Germany.

Summary

LCOS 8.70 CC offers a comprehensive security concept to provide site connectivity to companies that deal with sensitive data and require the appropriately high standards of security. The LANCOM CC range of products provides high-security VPN site connectivity based on field-proven and highly integrated LANCOM components that meet high security standards. They offer a vast range of practical functions, ranging from ADSL to the firewall and Advanced Routing and Forwarding. What's more, LANCOM is a German company offering hardware and software "Made in Germany" — a further ground for confidence, which is strengthened still further by the certification of LCOS by the German Federal Office for Information Security.

| Area | LANCOM CC routers | LANCOM VPN routers |
|-------------------------------|---|--|
| Configuration & commissioning | Clearly defined process for the certified operation: Simplification by means of CC Start-up Kit | Convenient commissioning with all wizards, LANconfig, WEBconfig, etc. |
| Management | Clearly defined management protocols for certified operation (e.g. SSHv2) | Extensive range of options for management and remote maintenance (incl. SNMP, HTTPS, ISDN) |
| Updates | Functional LCOS updates only with recertified software | Regular, free LCOS updates with new features |
| Options | VPN 25/200/500/1000 options for the corresponding devices | Complete flexibility in the use of options including the Public Spot and Content Filter |
| Security level | Hardened and certified LCOS operating system LCOS 8.70 CC | Standard LCOS with numerous improvements from the certified LCOS |

Table 2: Functions and characteristics