



## Level of Performance Datacenter Star Audit

The list in this guide highlights the requirements for fulfilling the criteria of the five DC Stars categories (1–5 stars) of the Datacenter Star Audit certification.

**Please note** that technical aspects of the redundancy design and the process performance can be substantiated, not only by the methods described in this document, but also by alternative circuits and SLA.

If you have any questions about the certification process, please contact us at [info@dcaudit.de](mailto:info@dcaudit.de)

## Target Group and Focus

The Datacenter Star Audit is suitable for all companies, which operate a dedicated server room with minimal requirements for air conditioning, power supply, and network connections. The audits focus on the data center's security and on the availability and redundancies of the facility's infrastructure (facility management).

### Advantages and Benefits for data center operators

- Prompt execution with manageable financial expenses
- Quality management and increase of credibility
- Cost reduction in the case of business developments
- Improvement of in-house appreciation for security and quality
- Positive addition to the marketing-mix
- Efficient assessment process with questionnaire and on-site inspection
- Publication on the DCSA website, by the eco newsletter and podcast, and mentions in our press releases and user reports

### Advantages and Benefits for data center customers

- Savings potential in the case of tenders
- Cost efficient selection process is possible
- Higher market transparency owing to the DC Stars grading
- Improved match between requirements and the respective offers
- Assessment grid *Stars* is familiar
- Objective evidence for quality and security provided by an independent association structure and by the eco authorised auditors
- Regular quality control and continuous audit improvements

## Documentation of the Audit Results

In addition to the visible documentation of the audit results in the form of **certificates** and **insignias**, the assessed data centers receive a detailed internal **audit report** and a **performance documentation** for their clients. Moreover, the DCSA offers a series of interesting **added values** (e.g. Publication on DCSA website, via the eco newsletter and podcast, mentions in our press releases and user reports).



## Audit Process

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The Datacenter Star Audit (DCSA) offers you a prompt audit process that is also financially manageable. The audit can be all wrapped up in 3–4 weeks (according to experience) from the date the contract documents are sent until the certification is received.

### A. Sending the Contract Documents

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The data center operator receives in addition to the **audit contract**, the **questionnaire** (RfI), **instructions** for the questionnaire (guide for customers), **license guidelines** as well as the **guidelines for the logo usage**.

### B. Answering the Questionnaire

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The questionnaire used for the audit consists of about 220 questions pertaining to the categories facilities, staff, technology, and procedures. To facilitate the process, the data center operator will receive a **guide for customers** which explains the questions in detail and lists possible answers. Of course, the auditors are available for questions during the entire audit process.

### C. Questionnaire Evaluation by the Auditors

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After the data center operator fills out the questionnaire (RfI = Request for Information), the auditors examine the plausibility of the answers.

### D. On-Site Consultation with the Auditors

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- Questionnaire is discussed
- Maps are discussed
- Certificates are verified
- Documentation is assessed

### E. Data Center Inspection

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- Questionnaire is examined
- Maps are verified
- Facilities are examined
- Procedures are traced back
- The data center's proximity is assessed

### F. DCSA Evaluation System

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The results taken from the **verified questionnaire** and the **on-site inspection** are used for the DCSA assessment. In considering a point system, a **specified** and **objective** classification will be carried out. Each category and subcategory will be weighted accordingly by using a particular code. According to the assessed performance level (%), the results can be matched to one of the five performance degrees (DC Stars).

### G. Awarding Certificate and Insignia

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After the successful certification, the data center operator receives a DCSA certificate and insignia. During the validity period of the audit (24 months), the digital logo assets made available may be used for marketing purposes in the context of the licensing policies.

## Assessment Criteria

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The evaluation of a data center is carried out via a large questionnaire (Request for Information) for the four categories **facilities**, **staff**, **technology** and **procedures** as well as being based on a **comprehensive inspection** by the eco authorised auditors (eAA).

**The questionnaire covered the following thematic categories:**

### Facilities

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- Access control and security
- Protected zones and fire control
- Raised floors
- Position in the building
- Facility feedings
- Scalability
- Structure of the building
- Cleanliness of the data center

### Technology (Power Security, Air Conditioning, Network Infrastructure)

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- Transformer / Main distribution for medium and low voltage
- Power supplier
- AC and DC power supply
- Emergency power supply, emergency shutdown, lightning protection
- Air conditioning and air filtration
- Temperature and humidity
- Carrier

### Procedure

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- ITIL conformity
- Continuity management
- Existing certifications
- Access procedure
- Data security

### Staff

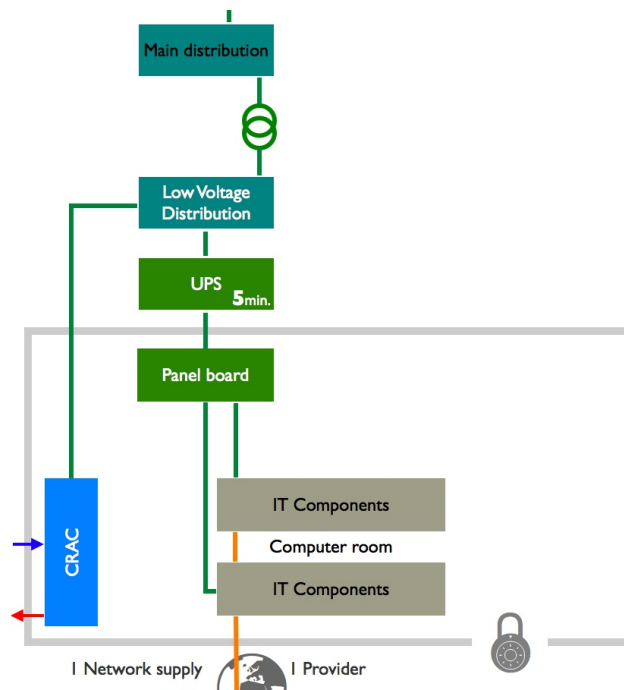
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- Staff size
- Multilingual staff
- Accessibility and availability
- Qualifications
- Quality management

In assessing and deciding the **performance grade** (%) from the questionnaire's responses and the inspection, the result can be assigned to one of the five **Levels of Gratification** (DC Stars):

<b>DC Stars Category</b>	<b>Gratification Level</b>
1 Star	35 – 54 %
2 Stars	55 – 64 %
3 Stars	65 – 74 %
4 Stars	75 – 89 %
5 Stars	90 – 100 %

## Requirements for a Typical 1-Star Data Center

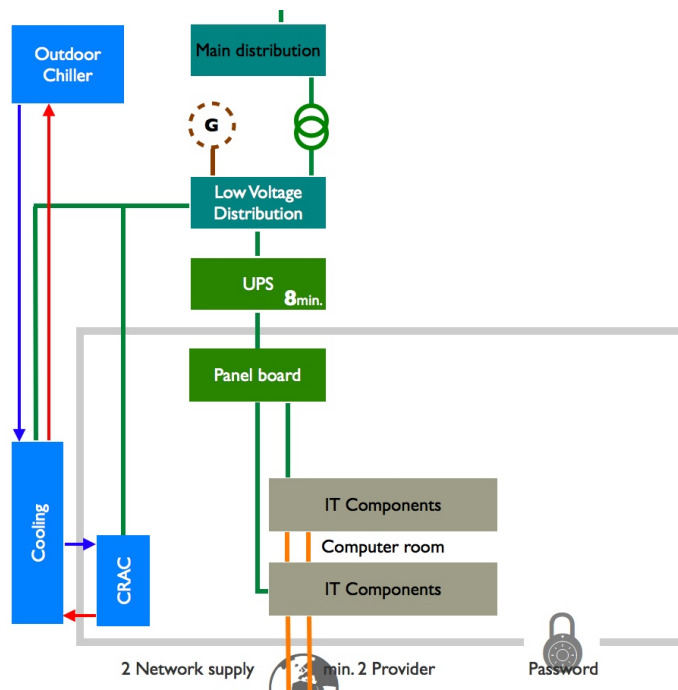


- Basic air conditioning (n)
- Basic power supply (n)
- A UPS (perpetual quality power, overvoltage protection, etc.) designed with (n)
- 5 minutes hold-up time to shut down the operation systems
- Devices for the detection of fire (smoke alarm) and for fire fighting (fire extinguisher)
- Architectural separation of the computer room from other spaces by the minimum F30/T30 (German-specific rating system for fire-resistance)
- Several fire sections in the data center are not necessary
- Heat dissipation performance: 220-320 W/m<sup>2</sup>
- Minimum physical access protection (steel doors/security locks/windowless room or secured window) and a warning system/break-in security
- Certified staff for the operation of the servers (network technology/operation system)
- Stable network connection (min. 1 Internet access provider, 1 independent network connection)
- Basic supply routes

### Evaluation Period: 1 Year

- Limited operation because of maintenance: 2 downtime periods over 14 hours
- Availability of the data center: 99.2% per year
- 2-3 outages per year with a downtime of respectively 5 hours

## Requirements for a Typical 2-Star Data Center

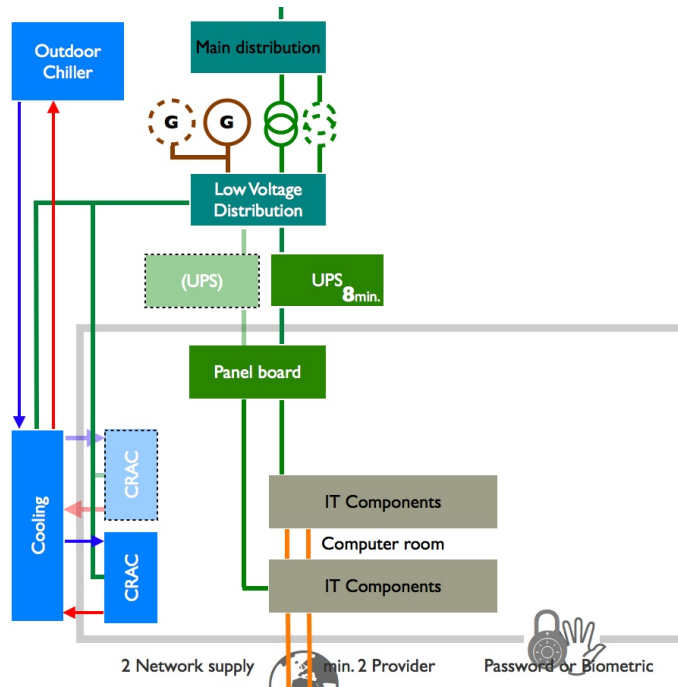


- Basic air conditioning (n)
- Basic power supply (n)
- A UPS (perpetual quality power, overvoltage protection, etc.) designed with (n)
- 8 minutes hold-up time to shut down the operation systems
- Devices for the detection of fire (smoke alarm) and for fire fighting (fire extinguisher)
- Architectural separation of the computer room from other spaces by the minimum F30/T30
- Several fire sections in the data center are not necessary
- Heat dissipation performance: 220-320 W/m<sup>2</sup>
- Physical access protection (steel doors/security locks/windowless room or secured window) with a mental identification feature and a warning system/break-in security
- Certified staff for the operation of the servers (network technology/operation system)
- Stable network connection (min. 2 Internet access providers, 2 independent network connections)
- Basic supply routes

### Evaluation Period: 1 Year

- Limited operation because of maintenance: 2 downtime periods over 12 hours
- Availability of the data center: 99.671% per year, annual downtime 28.8 h
- 2-3 outages per year with a downtime of respectively 4 h

## Requirements for a Typical 3-Star Data Center

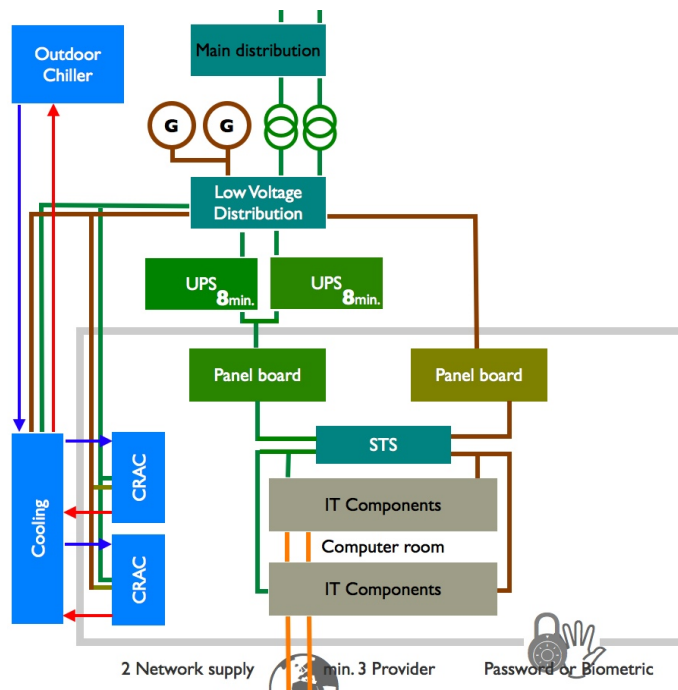


- Air-conditioning (n)
- Redundant power supply (n+1)
- Diesel generator
- A UPS (perpetual quality power, overvoltage protection, etc.) designed with (n)
- 8 minutes hold-up time to shut down the operation systems
- Devices for the detection of fire (smoke alarm) and for fire fighting (fire extinguisher)
- Architectural separation of the computer room from other spaces by the minimum F30/T30
- Several fire sections in the data center are not necessary
- Heat dissipation performance: 430-800 W/m<sup>2</sup>
- Process of an individualised authentication (biometrics or mental identification)
- ITIL process maturation grade 2 (mostly documented and adjusted to the ITIL model)
- Physical access protection with logging (steel doors/security locks/windowless room or secured window) and a warning system/break-in security
- Certified staff for the operation of the servers (network technology/operation system)
- Stable network connection (min. 2 Internet access providers, 2 independent network connections)
- Basic supply routes

### Evaluation Period: 2 Years

- Limited operation because of maintenance, 3 downtime periods for 12 hours
- Availability of the data center: 99.671% per year, downtime 22 h
- 2 outages per year with a downtime of respectively 4 h

## Requirements for a Typical 4-Star Data Center\*



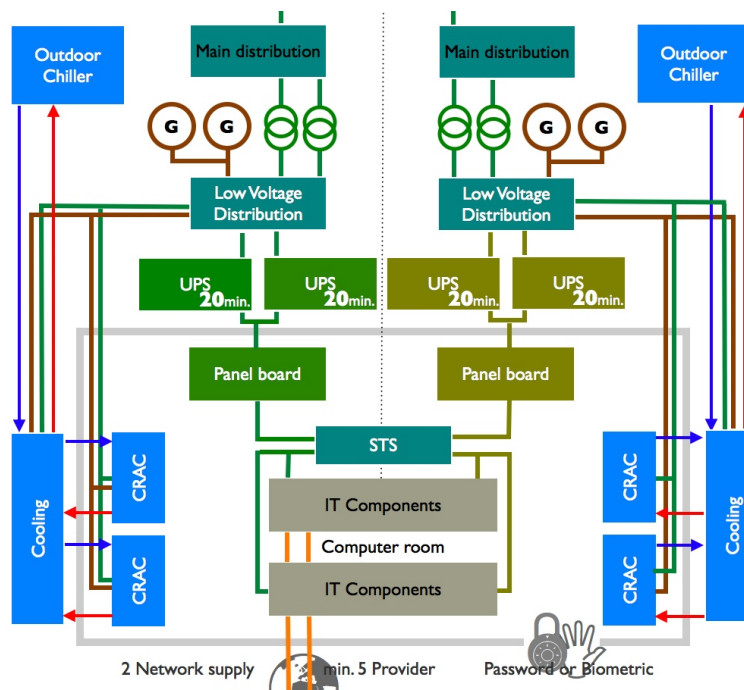
- Air conditioning (n+1) + UPS connection
- Redundant power supply (n+1) and 2 facility feedings
- Diesel generator
- A UPS (perpetual quality power, overvoltage protection, etc.) designed with (n)
- 8 minutes hold-up time to shut down the operation systems
- Devices for the detection of fire (smoke alarm) and for fire fighting (fire extinguisher)
- Architectural separation of the computer room from other spaces by the minimum F30/T30
- Several fire sections in the data center are not necessary
- Heat dissipation performance: 430-1400 W/m<sup>2</sup>
- Process of an individualised authentication (biometrics or mental identification)
- Access to the data center: at least 2 door systems
- ITIL process maturation grade 2 (mostly documented and adjusted to the ITIL model)
- Physical access protection with logging (steel doors/security locks/windowless room or secured window) and a warning system/break-in security
- Certified staff for the operation of the servers (network technology/operation system)
- Stable network connection (min. 2 Internet access providers, 2 independent network connections)
- Basic supply routes

### Evaluation Period: 5 Years

- Limited operation because of maintenance, 2 downtime periods for 4 hours
- Availability of the data center: 99.982% per year, downtime 1.6 h
- 2 outages per year with a downtime of respectively 4 h

\*) **Please note** that technical aspects of the redundancy design and performance level obtained within the scoring process, can be substantiated not only by the methods described here but also by alternative circuits and SLAs.

## Requirements for a Typical 5-Star Data Center \*



- Basic air conditioning (n+2) + UPS connection (n+1)
- Redundant power supply (n+2) and 2 facility feedings (n+2 can be realised with a technical circuit and substantiated by service level agreements)
- 2 x diesel generator
- A UPS (perpetual quality power, overvoltage protection, etc.) designed with a minimum of (n+1)
- 20 minutes hold-up time to shut down the operation systems
- Devices for the detection of fire (smoke alarm) and for fire fighting (fire extinguisher), VESDA system
- Architectural separation of the computer room from other spaces by the min. F60/T60
- Several fire sections in the data center are necessary
- Heat dissipation performance:  $\geq 1500 \text{ W/m}^2$
- Process of an individualised authentication (biometrics or mental identification)
- Access to the data center: at least 2 door systems
- Optical turnstile for customer entrance
- ITIL process maturation grade 4 (completely documented, adjusted to the ITIL model)
- Documented Procedures (e.g. with the help of ISO 27001, ISO 20000, ISO 9001)
- Physical access protection with logging (steel doors/security locks/windowless room or secured window) and a warning system/break-in security
- Certified staff for the operation of the servers (network technology/operation system)
- Stable network connection (min. 5 Internet access providers, 2 independent network connections)
- Supply routes doubled

### Evaluation Period: 5 Years

- No limited operation because of maintenance
- Availability of the data center: 99.991% per year, downtime 0.8 h
- 1 outage per year with a maximum downtime of 4 h

\*) **Please note** that technical aspects of the redundancy design and performance level obtained within the scoring process, can be substantiated not only by the methods described here but also by alternative circuits and SLAs.

## Testimonials



The Datacenter Star Audit assists us in responding for questions, which potential customers ask in their tenders addressed to our data center

*Patrick Pulvermüller,  
CEO  
Host Europe GmbH*



The Datacenter Star Audit documents to our customers the highest quality and security in context of a familiar assessment method

*Joachim Astel,  
Member of the board  
noris network AG*



In contrast to other certifications, the Datacenter Star Audit focuses on the actual practical demands and market needs – those criterion that are particularly relevant for our customers, who outsource the total operation of their business-critical applications to us

*Felix Höger,  
Member of the board  
Pironet NDH AG*



The Datacenter Star Audit 2.0 further developed the certificate that has been successfully used since 2005 in the areas of technical modernity and diversification of the data centers. In considering what makes the best assessment for issuing certificates for data centers, which includes a clear focus on transparent categories for security, availability and redundancy, a metrics has been developed that provides more transparency for the market and an improved compatibility between the data centers for the end customer

*Dr. Andreas Jabs,  
eco Authorized Auditor  
Alegri International GmbH*

### **Project management:**

Roland Broch

eco – Association of the German Internet Industry e.V.  
Datacenter Star Audit

Lichtstrasse 43h  
50825 Köln

Tel.: +49 (0) 221 700048 – 220  
Fax: +49 (0) 221 700048 – 111

info@dcaudit.de