Device configuration backup in the LANCOM Management Cloud

Despite careful planning and technical support, configuration errors can never be completely ruled out. In complex networks, unexpected dependencies or unintentional changes can lead to functions not working as intended.

To be prepared for such situations, the LANCOM Management Cloud (LMC) offers a backup and restore function for device configurations. This enables administrators to quickly restore a stable device configuration and thus gain time for root cause analysis. By making targeted comparisons between configuration statuses, errors can be efficiently identified and rectified before the revised configuration is rolled out again.

Functionality of the device configuration backup

Each device in the LMC has five automatic backup slots as standard. After each rollout, a new backup is created to replace the oldest one. In addition to the automatic backups, a further configuration status can be saved manually. These backup statuses are available for every LMC-managed device[1] and can be rolled out as required. The SDN configuration and the detailed configuration for the respective device are retained in the LMC so that troubleshooting can be carried out on this basis before the new rollout.

(i) As soon as a backup configuration is restored on a device, the device switches to recovery mode. In this mode, the device is decoupled from the LMC on the configuration side and does not send any local changes to the LMC. To return the device to normal configuration mode, the configuration corrected in the LMC must be rolled out to the device again. After receiving this configuration, the device automatically exits recovery mode and is fully managed by the LMC again.

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1) The following operating system versions or higher are required:
   Routers / Gateways: LCOS 10.92
   Unified Firewalls: LCOS FX 11.1 RU1
   Support for access points (LCOS LX) and switches (LCOS SX) is in planning.

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Figure 1:
Recovery mode

Application example: Troubleshooting and recovery

An administrator rolls out a new router configuration to update security policies. Shortly afterwards, he realizes that the site's VPN connectivity has been lost. This has serious consequences: Remote employees can no longer connect, and some mission-critical services are no longer available.

As the error in the configuration is not immediately obvious, the administrator decides to first restore a previously functioning backup configuration to the affected device. This allows operation to be restored quickly while parallel the cause is analyzed.

The administrator then uses the configuration comparison in the LMC to compare the faulty configuration with the last working version. He identifies that a certain VPN parameter was set incorrectly, which led to the connection being interrupted. After the correction, the adjusted configuration is rolled out again and the problem is resolved.

Important to note

The faulty configuration remains stored in the LMC and is transferred to the device again during the next rollout. The backup therefore only temporarily restores the original functional status. The administrator must therefore ensure that the incorrect configuration is corrected before the next rollout.

Configuration comparison in the LMC

In the LANCOM Management Cloud, administrators can compare the configuration status in the LMC with the current device configuration to identify changes and possible errors.

Call up comparison view

1. Navigate to: **Devices > Select device > Detail configuration**
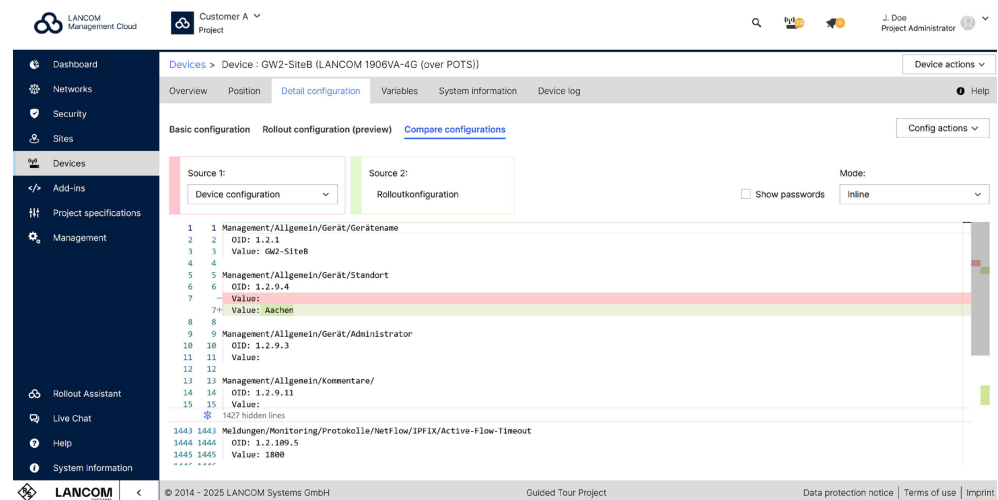2. Select option: **Compare configurations**

Figure 2:
Compare configurations

Functions of the configuration comparison

→ **Recognize differences**: Changes between two configurations are highlighted, both by color coding and by line markings.

→ **Use filter options**: Sections that are not relevant are automatically hidden to increase clarity.

→ **Set view options**: The configurations can be displayed side by side or one below the other, depending on personal preference.

→ **Synchronous scrolling**: Both configurations can be scrolled horizontally at the same time in order to compare lines directly.

→ **Observe password protection**: Changed passwords are not displayed by default to ensure their confidentiality.

Restrictions when comparing configurations

Not all device categories and features can be evaluated directly via the configuration comparison. For example, Unified Firewalls (UFs), some switch features and certain add-in configurations (addScriptLine) are not included in the automated comparison.

Manual backup and restore

In addition to the automatic backups, an additional manual backup of a current configuration status can be saved directly in the LMC. This is then available for restoration.
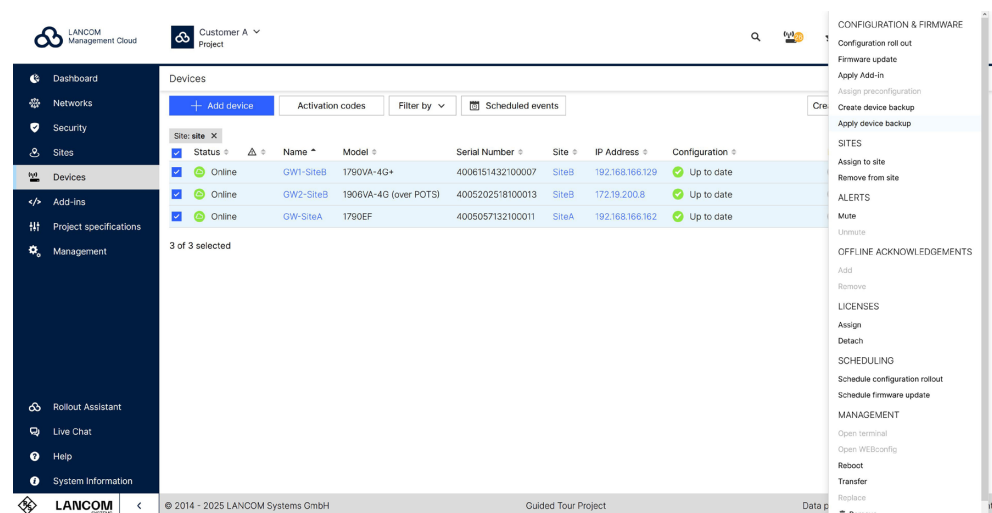
(i)   **Activation and deactivation of the feature**

The device configuration backup is disabled by default in the LMC. It can be enabled under:

   Project specifications > Basis > Use device backup

Creation of a manual backup in the LMC
1. Navigate to: **Devices > Select device(s) > Three-dot menu**
2. Select option: **Create device backup**

Figure 3:
Three-dot menu

Restoring a backup in the LMC

1. Navigate to: **Devices > Select device(s) > Three-dot menu**
2. Select option: **Apply device backup**
3. Selection of the backup configuration:
   - The current backup
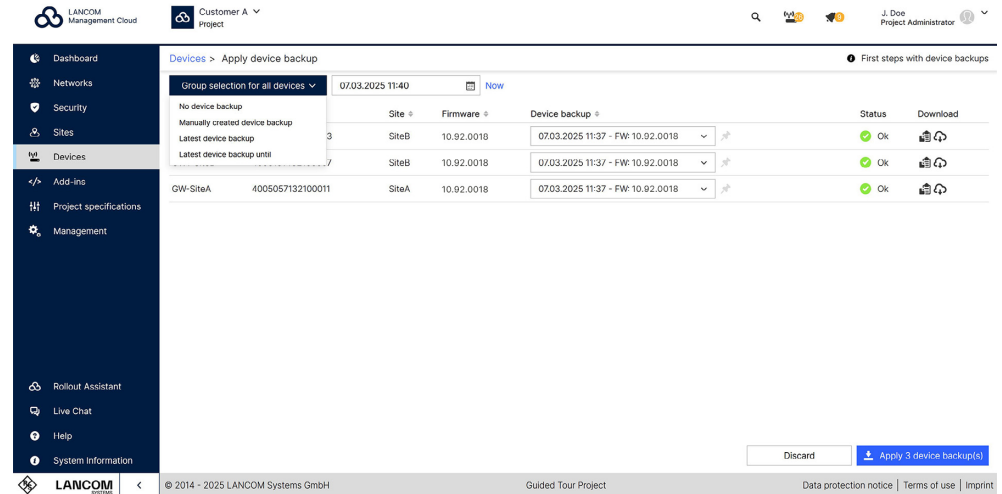   - A backup at a specific point in time in the past

Figure 4:
Apply device backup

Export and manual recovery in the event of loss of connection to the LMC

If a device is no longer accessible via the LMC, a password-protected configuration backup file can be exported from the LMC. This contains all the configuration attributes of the device and can be manually imported to the device.

1. Navigate to: **Devices > Select device(s) > Three-dot menu**
2. Select option: **Apply device backup**
3. Save the backup file and copy the associated password under **Download** and restore them on the affected device.

This method is particularly relevant if the device can no longer be managed remotely and a local restore is required.

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Conclusion

The device configuration backup allows a significantly shorter recovery time of a temporarily functional configuration status in the event of misconfigurations. The flexible comparison function and individual customization options significantly increase the transparency and efficiency of troubleshooting. This feature enables administrators to keep network operations stable and to react quickly and specifically in the event of a fault.

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