

# Dell Telecom Infrastructure Automation Suite

Automate to accelerate your network cloud transformation

## Benefits

- **Simplify infrastructure management** by automating the lifecycle management of bare metal servers and leveraging a common management plane that aligns with industry standards for easy integration
- **Enable a consistent and repeatable operating environment** that reduces costs and simplifies your ability to scale
- **Power AI with telemetry** by aggregating server telemetry to enable actionable insights



## Modern telecom infrastructure is hard to build, hard to maintain and hard to operate

Communications service providers recognise that modernizing their network infrastructure is a necessary step in digital transformation. But, building, maintaining, and operating this infrastructure is easier said than done. CSPs, running container-as-a-service software on industry standard servers, are aware of how fragmented and heavily reliant on custom integrations and manual scripting bare metal server management is.

So, why is modern telecom infrastructure so hard to build and maintain?

Integrating the various multi-vendor components of a disaggregated stack and deploying and maintaining the stack is difficult. It is usually done via home-grown tools, employing imperative automation, that require extensive integrations and scripting to build and maintain. Imperative automation uses a procedural approach where the operator provides specific instructions on how to perform each task. The scripts developed with imperative automation require continuous maintenance due to diverse hardware and persistent software changes, such as software patches, new hardware options, BIOS, firmware updates, and more. Additionally, inconsistent methodologies result in potential configuration errors affecting security, performance, and reliability.

These home-grown tools are frequently a collection of open-source software and supplier-specific managers. This introduces complexity when integrating bare metal server management with Service Management Orchestration, other domain orchestrators, and GitOps tools.

## Configuration management

In large, complex networks, it's also hard to maintain an up-to-date view of the configuration of your servers. Manually tracking server configurations is impractical and time-consuming. Manual inspections and tracking changes with spreadsheets are also error-prone processes that increase the risk of a failed update. All these tasks require substantial engineering knowledge to implement and sustain.

These challenges result in a process that is slow, cumbersome, and unsustainable, particularly considering the rapidly advancing pace of technological developments in the telecom industry. Woven through these challenges is the complexity of bare metal provisioning and lifecycle management that stems from several intricate and evolving requirements.

- **Need for a detailed, up-to-date view of the configuration of your servers**

This is crucial to maintain comprehensive visibility into system configurations across a large fleet of servers, ensuring that each server's specifications and statuses are accurately documented and readily available.

- **Continuous server health and configuration monitoring**

This involves real-time tracking and management to ensure optimal performance and security.

- **Bios, firmware, driver, and operating system updates**

The ability to update BIOS, firmware, drivers, and operating system settings across numerous parameters, adds another layer of complexity. This not only requires technical expertise but also an understanding of hardware components specific to supporting telecom applications. Moreover, professionals managing bare metal servers must have the expertise to adapt to the constant changes in the hardware landscape. Staying updated with changes and integrating new hardware efficiently is crucial. Declarative automation becomes essential in this context, assisting in managing deployments and updates to server hardware seamlessly.

- **Integration**

Integration challenges also emerge with the need for bare metal provisioning systems to work with CI/CD tools and higher-level orchestration to enable true Zero Touch Provisioning (ZTP). This integration ensures automated deployment and update processes are efficient, error-free, and scalable.

- **AIOps**

AIOps and other service assurance applications require the aggregation of rich metrics from servers allowing them to simplify day 2 operations and avoid problems before they occur.

## Dell Telecom Infrastructure Automation Suite: The automation solution for modern telecom networks

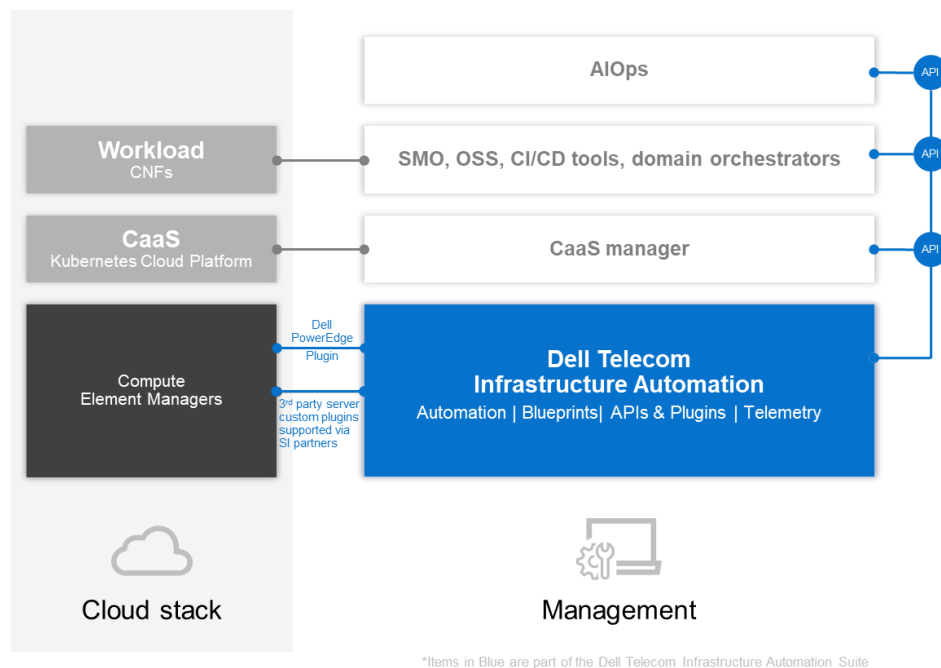
The Dell Telecom Infrastructure Automation Suite has been built from the ground up to address management challenges of modern telecom infrastructure.

The Suite replaces today's fragmented, engineering-intensive, manual approach to the management of cloud infrastructure with intent-based automation and prebuilt workflows, significantly reducing dependency on custom integrations and playbooks. The Suite automates the deployment, configuration lifecycle management of bare metal servers to reduce costs and ensure optimal performance. In addition, the Suite includes APIs that simplify integration with CI/CD tools and Service Management

Orchestration to enable zero touch provisioning. These capabilities ultimately help you deliver new services faster.

Dell automation enables you to:

- **Simplify infrastructure management** by automating the lifecycle management of bare metal servers and leveraging a common management plane that aligns with industry standards for easy integration
- **Enable a consistent and repeatable operating environment** that reduces costs and simplifies your ability to scale
- **Power AI with telemetry** by aggregating server telemetry to enable actionable insights



Dell Telecom Infrastructure Automation Suite is a software platform based on open standards and APIs that comprise four key components:

- **Infrastructure Automation & Telemetry**

At the heart of the Suite is automation which streamlines discovery, deployment, updates and more and telemetry aggregation which supplies rich metrics to support AIOps applications.

- **APIs**

APIs connect the Suite to domain orchestrators and CI/CD processes, and AIOps applications to seamlessly integrate with CSPs system management to enable true zero touch provisioning and simplify network operations.

- **Plug-ins**

Plug-ins are provided that enable our system integration partners to extend support to multivendor server environments.

- **Blueprints**

TOSCA-based blueprints automate the implementation of workflows and intents via declarative automation, enabling consistency and ensuring processes are free of manual errors and delays. Dell offers basic blueprints, but customers can also create blueprints on their own or work together with Dell or a systems integrator. The use of TOSCA-based templates ensures that blueprints are portable, allowing them to be used across different environments with minimal modification.

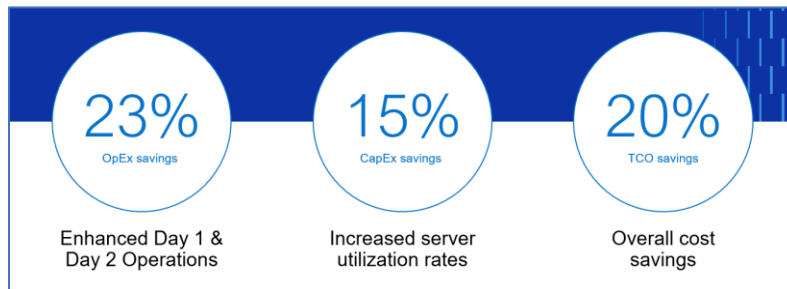
### Ease your transformation and your mind with Dell Services

Plan and design	Deploy and integrate	Manage and support
<ul style="list-style-type: none"> <li>• Collaborate in workshops to define business outcome</li> <li>• Develop tailored designs and blueprints</li> <li>• Optimize platform for efficiency, scalability, and cost-effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Simplify implementation based on designs and blueprints with remote install, configuration and integration</li> <li>• Drive specific outcomes with custom integration to CSP workloads and automation</li> <li>• Northbound &amp; southbound integration of solution components integration to DevOps tools</li> </ul>	<ul style="list-style-type: none"> <li>• Simplify upgrades, updates, rollbacks, and expansions</li> <li>• Leverage dedicated telecom-trained account team with specialized insights and escalation processes</li> <li>• Instructor-led training enables customer's team to hit the ground running</li> </ul>

Integrating automation into complex, mission-critical telecom infrastructure is no easy feat. Dell Services can help. From the design phase to deployment to ongoing management and support, the Dell Services team is ready.

### Projected savings across OpEx and CapEx

Dell worked with ACG Research to develop a TCO model that looked at the impact of utilizing Dell Telecom Infrastructure Automation Suite when deploying and maintaining a 5G Core network on Red Hat OpenShift growing from zero to 50 million subscriber over 5 years. The study showed CSPs a potential 23% reduction in OpEx, 15% improvement in server utilization rate, and a 20% reduction in TCO over five years.



To learn more, see the [ACG Research Report: Reducing TCO with Dell Telecom Infrastructure Automation Suite](#)

## **Simplify bare metal management with Dell Telecom Infrastructure Automation Suite**

The pressure on CSPs to innovate and grow while controlling costs is relentless with the need to digitally transform never more acute. The complexity of automating bare metal server management at scale in a disaggregated telecom network remains stumbling block for many CSPs as they look to transform their network. With the Dell Telecom Infrastructure Automation Suite, CSPs can accelerate their cloud transformation by unifying infrastructure management through a common management plane that aligns with industry standards. It enables CSPs to standardize operations at scale by enabling a consistent and repeatable operating environment. And, it powers AI by providing rich server telemetry to enable actionable insights.