

Amdocs Policy

**Built for 4G / 5G Network
and Service Control**



**Amdocs
Policy**

Introduction

Beyond enhanced broadband and fixed-wireless access, 5G will deliver massive improvements in terms of differentiated revenue-streams that have long been sought by even the most innovative of service providers. These will be derived from improvements to: latency, speed, coverage, capacity and density.

5G will enable a greater variety of more powerful devices that are capable of handling more advanced applications. Those devices need to be identified and empowered by service providers "out of the box". Some devices will be powered by 4G and 5G simultaneously working on the same device but on dedicated service "slices" (Figure 1) which adds to the challenges of efficiently providing optimal experiences to users. Amdocs Policy is the next generation of Policy Manager and a fundamental enabler for advanced 5G environments.

Amdocs Policy is the "network brain" that manages and controls essential service characteristics of the 5G network. It enables service providers to control, manage and monetise the enhanced characteristics of the 5G network and open up new markets. This places the service providers centre stage in the 5G value chain, as they can now develop offers where 5G network features (latency, quality of service, etc.) are central elements of the 5G offer and customer experience.

Amdocs Policy plays a critical role in a more flexible and rapid launch of services in the 5G environment and the enablement of differentiated services. A richer set of 5G use cases include but are not limited to: gating controls, QoS, usage monitoring, application detection, roaming controls, traffic steering, "slice" enablement and combinational services. Greater visibility and service control than ever before is more easily enabled by Amdocs Policy.

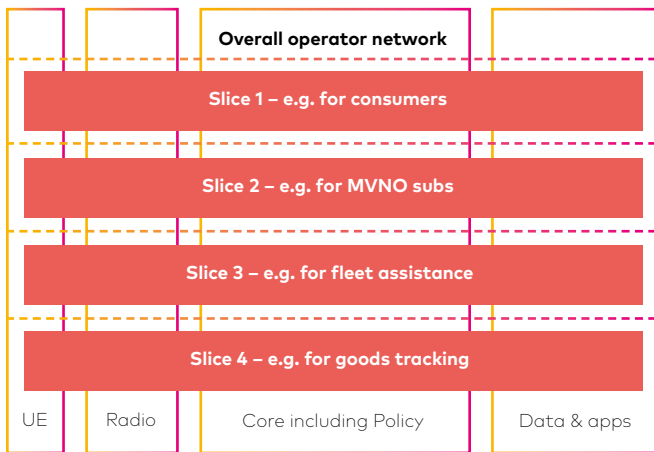


Figure 1 : Amdocs Policy & Network Slicing

Benefits

As can be seen in Figure 2, Amdocs Policy is backward compatible and ensures 3G / 4G PCRF features such as subscriber tracing and overload protection remain intact. This ensures support for hybrid 5G /4G/ 3G networks as well as standalone 5G. Deployments in a microservices-capable environment is assured and embedded via Amdocs toolkit for 5G microservices deployment. It ensures optimal use of existing resources as service providers migrate more flexibly to whatever 5G roll-out is right for them.

Critically however, Amdocs Policy is a new generation of Policy Manager and a foundational function for unleashing more powerful 5G use cases in an evolving 5G environment. FWA (Fixed-Wireless Access), eMBB (enhanced Mobile Broadband) and URLLC (Ultra Reliable Low Latency Control) use cases will form the key strands of future services for consumers as well as enterprises. Combinations of these benefits will unleash yet-to-be-imagined services that can provide massive benefits if service providers are first to market.

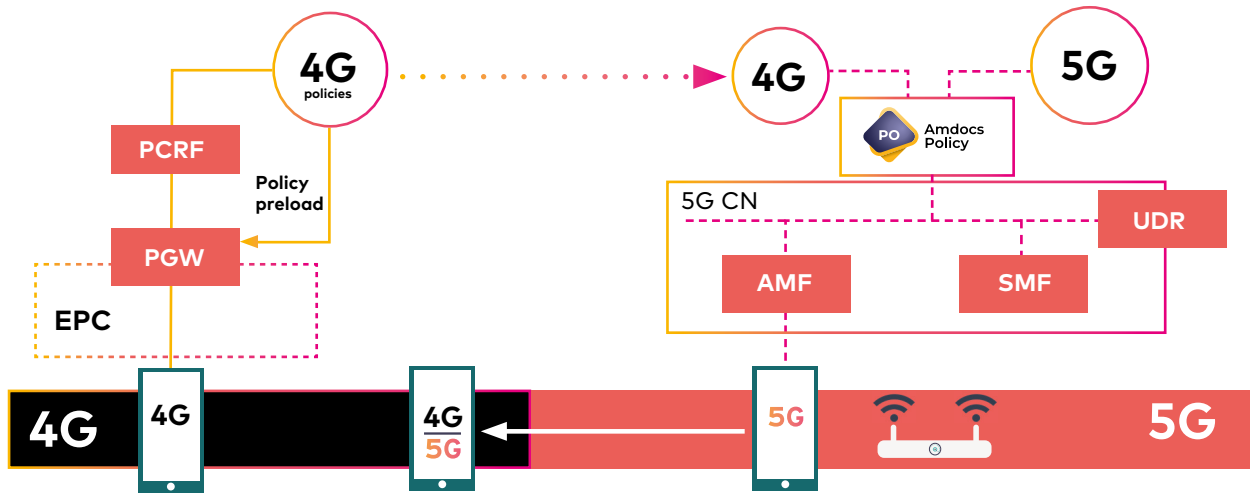


Figure 2: Catering for 4G & 5G

Features

Through the use of 'blueprints' Amdocs Policy enables service providers to launch and refine new services in minutes. Figure 1 (on page 1) shows a sample of the types of slices that can be supported. Intregation with Amdocs Charging enables service providers to apply different rating and charging rules for differenet slices, thus enabling value and experience-based charging.

The combination of connectivity with service-slice potential has been around for some time. Amdocs Policy is now at the heart of this evolved slicing potential in 5G. It plays a critical role in the 5G network ecosystem (Figure 3). It enables more testing of services and service chains more often, as well as real-time reporting of cleanly controlled differentiation. It enables service providers to be at the heart of new service trends, not a mere enabler.

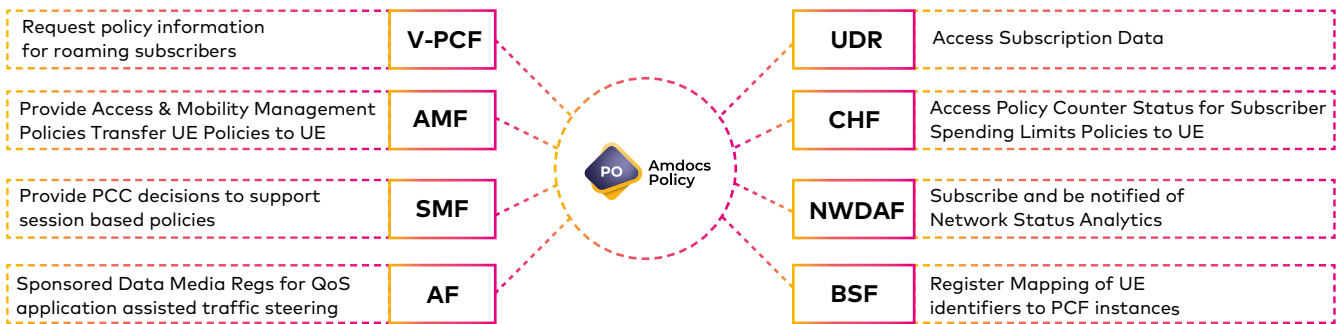


Figure 3 : The Central Role of Amdocs Policy in 5G

Key Features of Amdocs Policy include the following:

- Cloud-native rapid deployment: runs on AWS, Microsoft Azure and Google Cloud – public and hybrid, as well as multi-cloud environments
- Backward-compatible for 4G/5G hybrid scenarios
- Updates (not upgrades) via microservices
- Extreme usability, self-service and reporting
- Greater flexibility enabled by increasing arrays of open interfaces
- Deployment distributed to the edge to enable more 5G use cases such as URLLC
- Rapid testing of services / service-slices more often and true differentiation
- Access to Amdocs Tier1 DevOps experience where required

Feature	Description	Feature	Description
Useability	<p>Single UI providing a rich and intuitive UX</p> <p>“Blueprints” – Out of box fully working set of functionality that can be deployed “as is” or customised as necessary to fulfil operator needs</p> <p>Auto testability</p> <p>Designed to be highly observable – monitoring capabilities</p>	Operability	<p>Monitoring dashboards subscriber tracing dashboard :</p> <ul style="list-style-type: none"> • Subscriber tracing dashboard • Unified Logging and Alarming dashboards <p>ONAP</p> <p>Support on-boarding and lifecycle management with ONAP</p>
Cloud Native	<p>5G PCF, PCF+PCRF Supports HTTP/2 based communication</p> <p>All NF’s are built using microservice design patterns</p> <p>All microservices are stateless by design, only introducing stateful services where necessary</p> <p>Independently deployable as Docker containers</p> <p>Manage service upgrades and updates</p>	4G to 5G Interworking	<p>PCF & PCF+PCRF support migration options</p> <p>Deployable using the same CI/CD and software base</p> <p>Operational software base which delivers additional operational efficiencies</p>
Cloud Native	<p>5G PCF, PCF+PCRF Supports HTTP/2 based communication</p> <p>All NF’s are built using microservice design patterns</p> <p>All microservices are stateless by design, only introducing stateful services where necessary</p> <p>Independently deployable as Docker containers</p> <p>Manage service upgrades and updates</p>	Offer Catalog	<p>Simplified / Integrated into PCRF UI to manage entitlements + offers</p> <p>Automatic offer catalog recommendation logic processing and exception handling within microservices</p>

Feature

Description

Testability &
Automation

Continuous integration
and continuous
development platform

Platform for enabling
innovation and
partnerships

Feature

Description

5G
Partnerships

Close partnerships to
provide alignment of
roadmaps and feature set

Integration labs to
introduce a complete
end to end architecture

Upgradability

In-service updates (no
more "upgrades" due
to microservices) is
paramount emphasis

Elastic scaling is available
on all stateless
microservices

Backwards compatibility

API Driven –
Ability to script
and automate
Policy
configuration

All Interactions are
via a published API

Legacy
Migrations

An ability to import policies
from the existing EPC and
providing an equivalent
policy in the 5G PCF

Restful API to import
legacy policy data and
configuration + PCRF

Overload
Protection /
Robustness

Excessive latency

Overload conditions

Why We're Different

Amdocs is the market leader in 5G policy. Amdocs Policy has been selected to manage and control the 5G networks of many of the world's most innovative service providers to enable them to build new 5G network-centric use cases and enter new markets.

By working with leading service providers Amdocs recognises that there are many different starting points for 5G. Different service providers will have different plans for rollout and use case prioritisation. Amdocs Policy is designed to rapidly ease this transition while making best use of existing resources. Amdocs Policy can be bundled with tools to import legacy policy configurations and create a corresponding configuration that is robust in a 5G environment.

With Amdocs Policy we have extensive lessons learned from customer trials and live deployments. This includes understanding that certain open service mesh technologies are not telco grade. Testing has shown over 30% and as much as 50% overhead in using pure open source mesh vs the Amdocs developed version.

Whether the focus is on 4G, 5G or hybrid environments, backward compatibility is catered for via Amdocs Data Bridge microservice facilitating conversion from 4G to 5G, and the reverse if needed.

Regardless of additional complexities and challenges as well as opportunities that 5G represents, a fundamental objective of Amdocs has always been to reduce complexity and this continues with Amdocs Policy. Amdocs provides industry-leading experience and expertise: cloud-based software (not hardware), network agnosticism, microservices – these have been part of Amdocs DNA since before 5G was conceived. They are now fundamental to a successful 5G environment. Amdocs Policy is enabling service providers to control and manage the 5G network from a primary location. It provides the foundation for 5G network monetisation and the opening up of new 5G-enabled opportunities.

Amdocs can leverage the expertise, scale and solutions to provide our world leading products stand-alone or as part of a wider multi-product solutions.