OpenCasting and Transparent Multicast CDN

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Today's Content Delivery Challenges

Network operators are facing unprecedented challenges as content delivery, like streaming and downloads, floods ISP networks from commercial CDNs.

- Challenge #1: How to ensure a high QoE for streaming video at scale
- Challenge #2: How to generate revenue for delivering content to the end user
- Challenge #3: Mitigating middle-mile backhaul congestion

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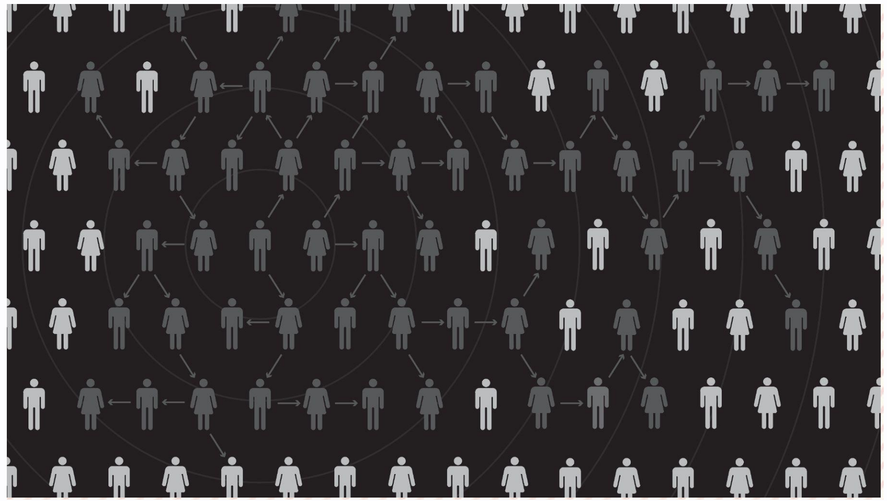
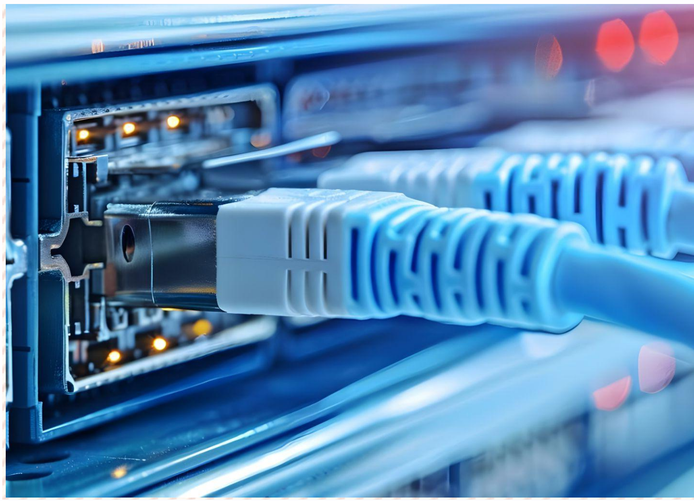
Contributing to the Challenges

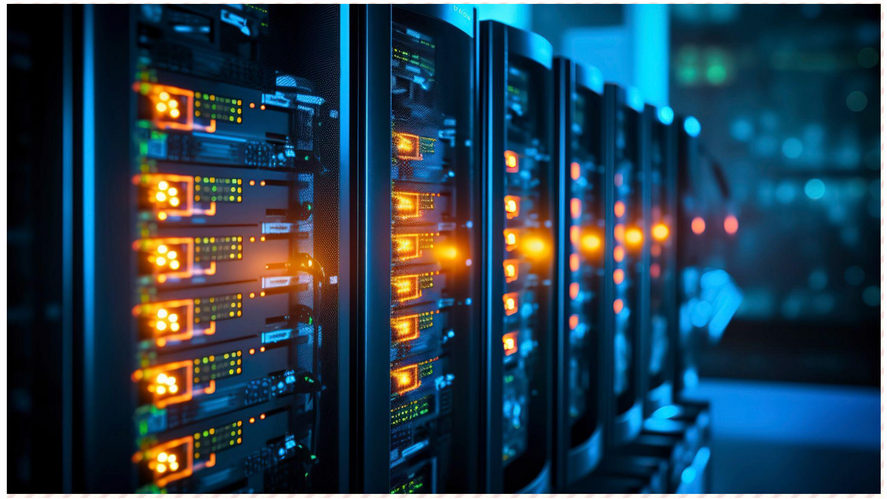
There are both technology and business elements which make these challenges hard to overcome for any network operator.



Unicast OTT's world. This delivery approach requires duplication of streams: for for each user. 1MM users @ 1080p is a lot of capacity.



Multicast unroutability. ISPs can't access our route multicast services



Exclusive Caching. Lack of caching at the edge means all requests are backhauled through the middle mile.

Settlement free peering. ISPs don't have a way to notify of available capacity for content delivery, so commercial CDNs eat their lunch

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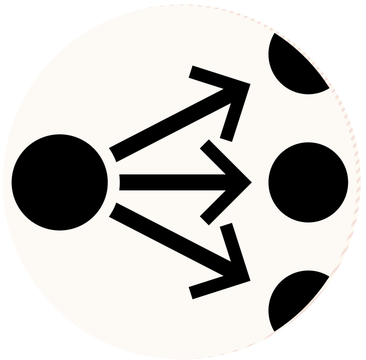
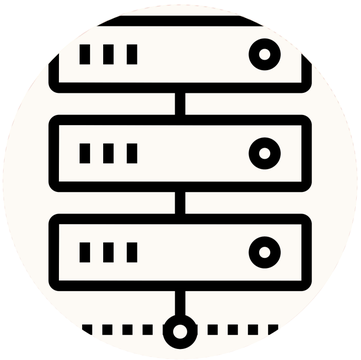
Using Technology To Address the Challenges



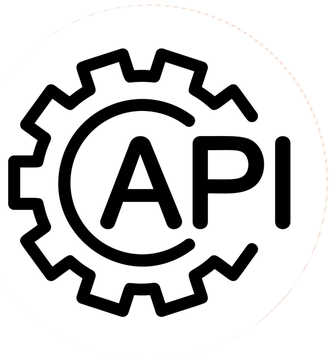
Multicast

By employing multicast, ISPs can save capacity while delivering a higher-quality video experience to more subscribers.



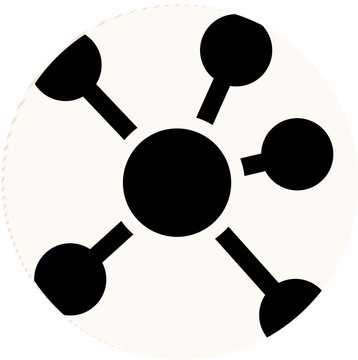
Edge Caching

In-network edge caching can store popular content which reduces backhaul and improves viewer QoE; it can even support content prepositioning.



OpenCaching APIs

By employing OC APIs in the edge-cache multicast box, ISPs can more easily broadcast available capacity.



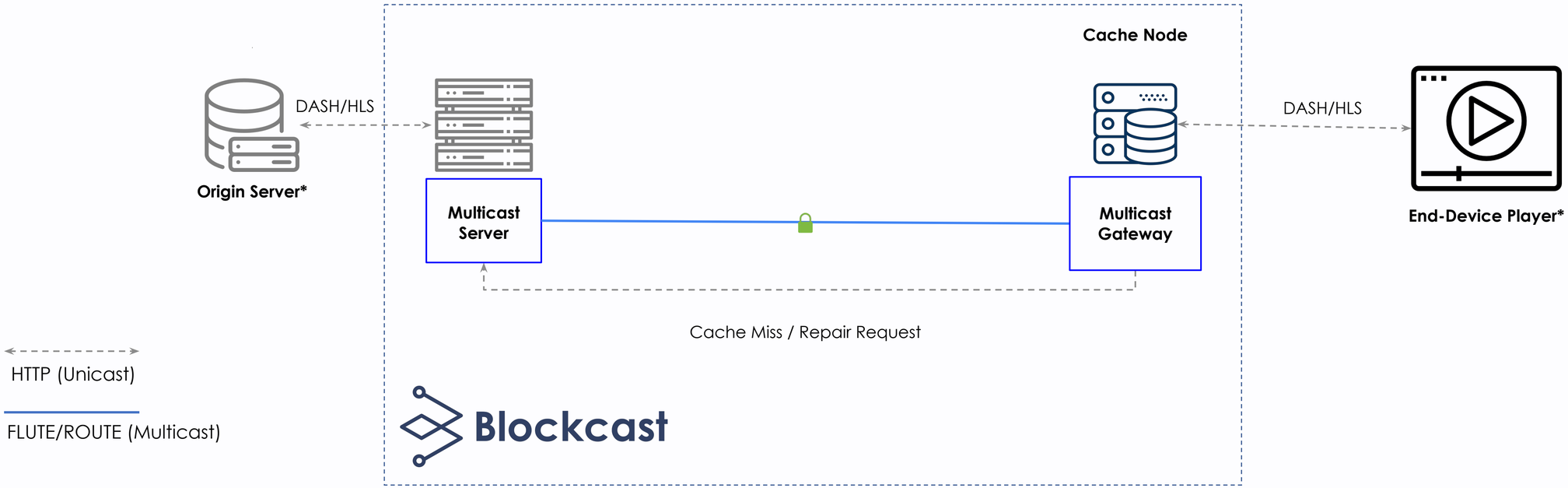
Marketplace

Through an open capacity marketplace, ISPs can generate revenue by making their capacity available to use.

Multicast Adaptive HTTP Proxy (MAHP)

A single appliance for transparent caching and multicast delivery

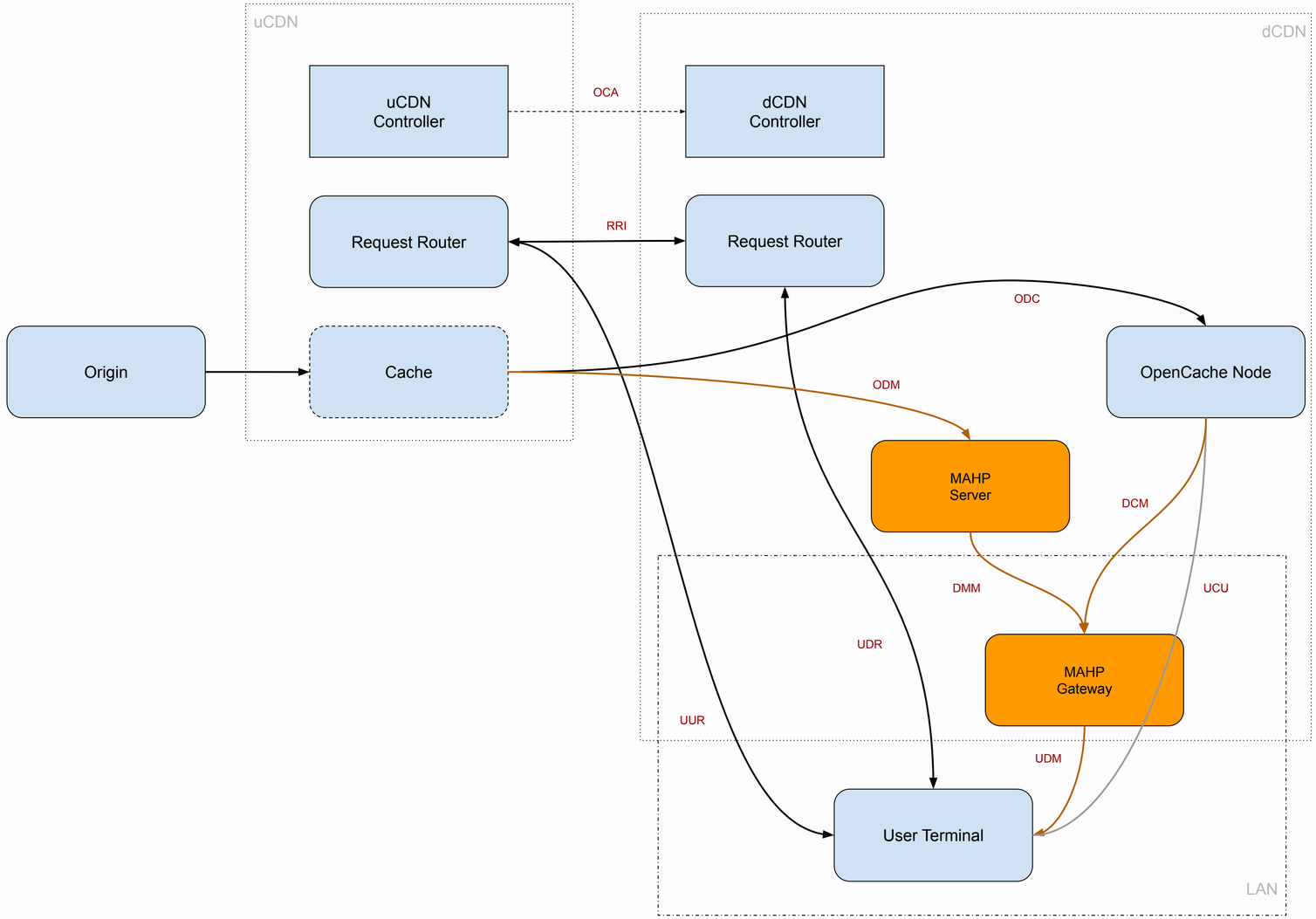
There is no requirement to alter the origin or the user agent. Client request driven with realtime integrity and source auth.



* No modifications are required to support the Blockcast CDN

OpenCasting: Multicast CDN Architecture

Extending SVTA OpenCaching based on CDNi (RFC6706) to multicast



Defines open interfaces for

- ❑ Service discovery
- ❑ Request routing
- ❑ Resource management
- ❑ Provisioning
- ❑ Monitoring

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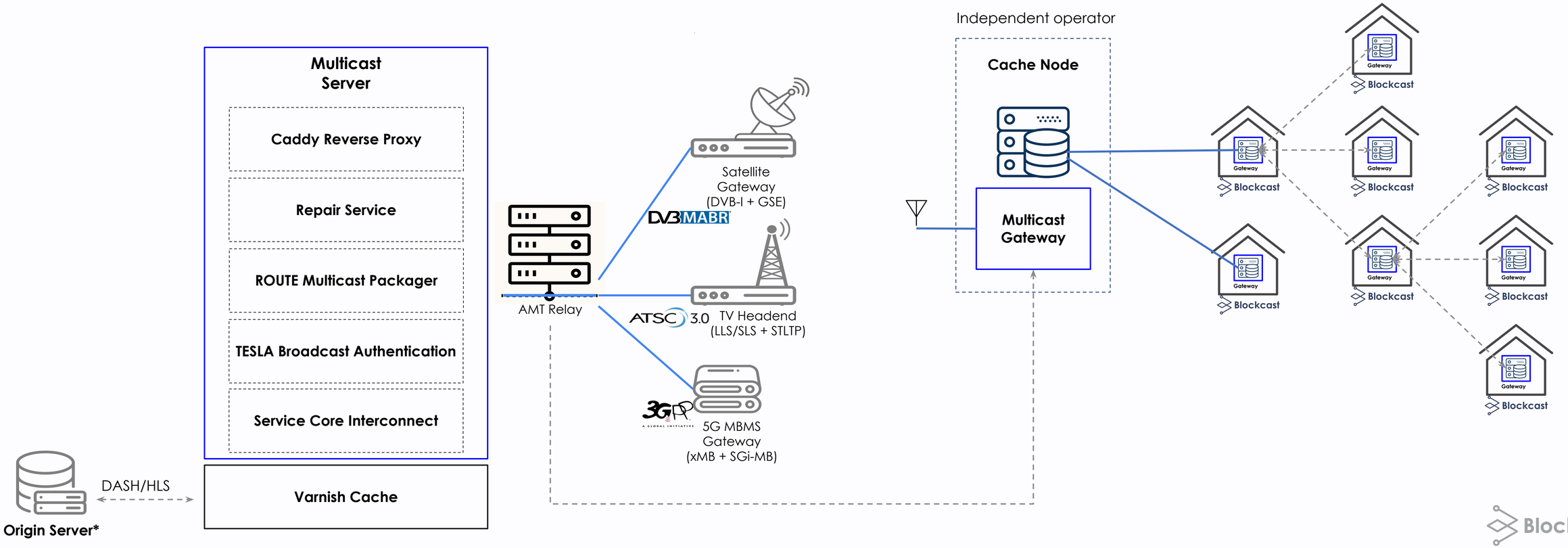
Extending the Delivery Network

Decentralizing content delivery

The Blockcast Network is more than just a multicast CDN. By enabling non-traditional deployment directly in user homes or with small datacenter providers to relay and cache multicast services, Blockcast leverages a much larger potential footprint to further extend scale and reach for multicast delivery.



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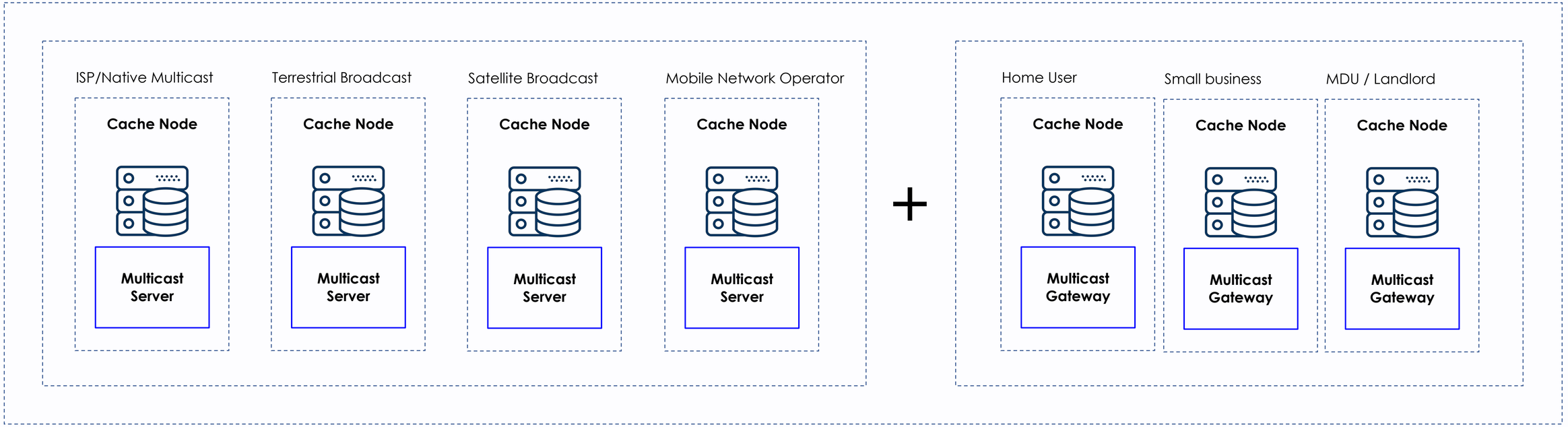
The Blockcast Overlay Network

Creating A Single Footprint

Combining all of the MAHP nodes from independent ISPs, MNOs, broadcasters, and home users, into a virtual overlay network that content providers can provision as a CDN through the Capacity Marketplace.

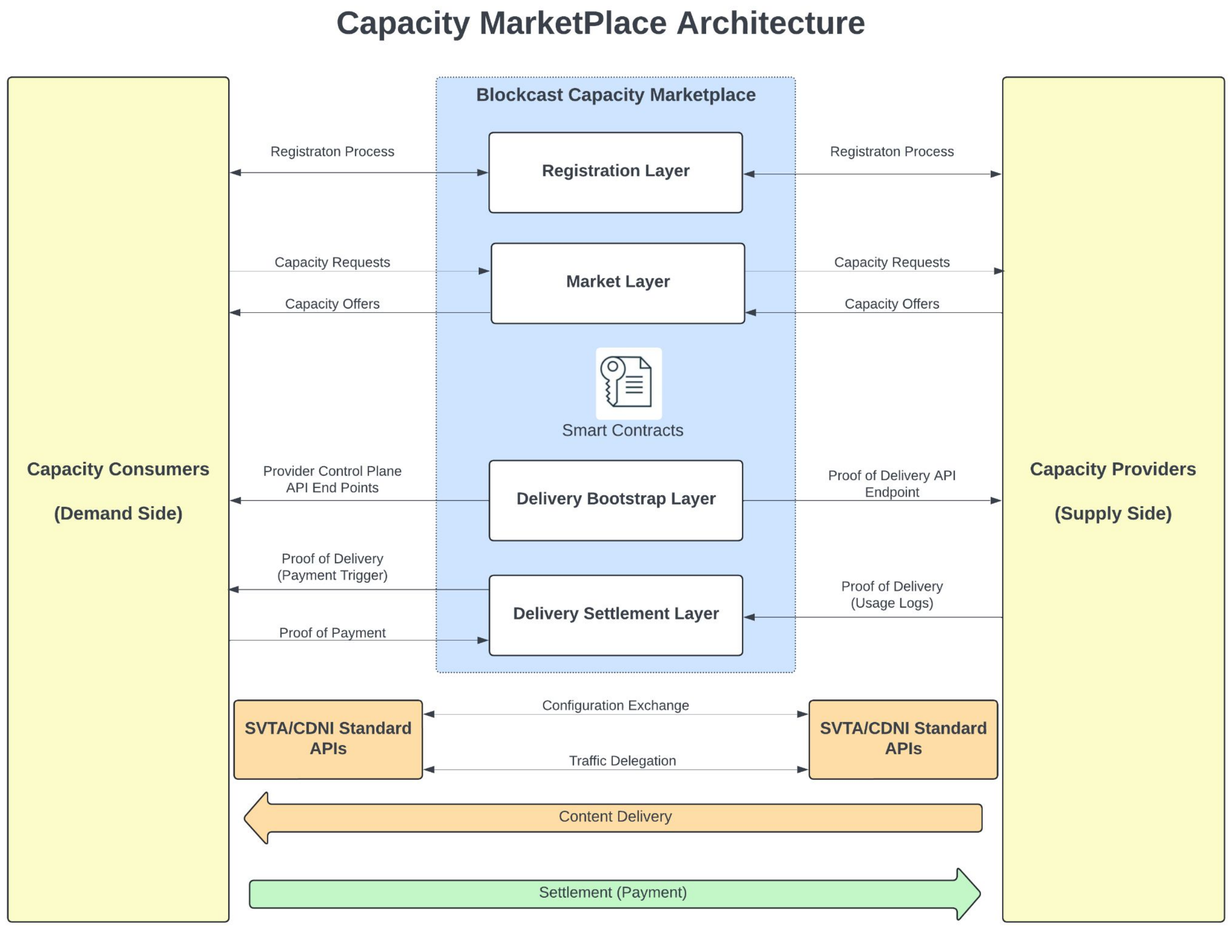


Blockcast "Overlay" Network accessible through the Open Capacity Marketplace

Enabling A New Business for ISPs/MNOs/Broadcasters

Sharing in Content Delivery Revenue

Through the Blockcast Open Capacity Marketplace, ISPs with MAHPs deployed in their network can contribute available capacity for content providers looking for cost-effective capacity.



How the marketplace works:

- Participants interact with the marketplace through a Web-based portal or programmatically (API)
- Capacity owners (ISPs, broadcasters) and content providers register with the marketplace
- Once registered, content providers submit a “bid” for capacity to which capacity owners respond.
- Once the “offer” is accepted by the content provider, a smart contract is created.
- The contract is fulfilled when the provider initiates direct interactions with the capacity provider using industry standard APIs to configure delivery and delegate traffic.
- Settlement happens according to the agreed-upon schedule and can involve payments, credits, tokens, release of escrow, or revenue share as specified in the contract.
- Detailed analytics and dashboards are available to marketplace participants.

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Thank you