

Fiber To The Home

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### FTTH idea

Fiber to the home or PON is generally agreed upon as the future of home internet delivery. It allows the longest use of the plan put into the ground to support it and has basically no limit to the bandwidth that can be made available to the home. It is the closest to a future proof technology as there is in this space. When possible it is the company’s long term interest to deploy FTTH for these reasons.

### Terms and Definitions

FTTH – Fiber to the home

MX – Juniper brand MX series routers

EX – Juniper brand EX Series Switch

ACX – Juniper brand ACX series access router

G8032/Ring/Ethernet Ring – G8032 Ethernet Ring protocol enabled access ring.

Uplink – Aggregate link to a higher level (Closer to the network core) network device.

### Requirements

* Redundancy to the Calix E7 level
* Card redundancy on any LACP LAGs

### FTTH design

The main components that make FTTH differ from our other current services is the de-aggregation level between out routing platform and the Calix FTTH gear. From the Routing layer the plan is to build an aggregation switch layer, all 10G, and from there build G8032 rings of Calix E7 chassis. This is displayed in the network diagram paired with this doc.

The goal is to have an aggregation platform to allow us to aggregate many E7 chassis up into one 10G or 100G interface on our hub router. This saves a great deal of capital over time as the aggregation switch ports are much less costly than the router 10G ports.

The use of G8032 rings is based on the Calix E7 support of same. Calix doesn’t support other path protection mechanisms, as such the G8032 rings will be used in order to provide path redundancy to these nodes.

### Network Use

Network use should be in line with the current use profile of our cable customers and shouldn’t require any special considerations.

### Network Impacts

This will add another layer/function of device within the network. This would be the aggregation platform at the edge. At this time that platform has not been decided upon.

### Capacity Planning

Capacity Planning should not change vs todays standard process.

### Management Network

To Be Determined.

### Security

TBD