Introduction

In general Tier 3 and Tier-4 datacenter will have redundancy to provide the business continuity with high availability to continue their function under unplanned or adverse conditions that would otherwise interrupt the data center’s telecommunications service.
The consistency of datacenter operation is dependent on the tier level of datacenter that was designed. Tier 3 and Tier 4 datacenter will have redundant cross-connect area and pathway that are physically
separated.

The datacenter needs to have multiple access providers to provide services, redundant network equipment for network level redundancy.

Minimal response time of technical support required in performing repairs to achieve the reliability of equipment to get high uptime.

The datacenter needs to have multiple entrance pathways from the property line to the entrance room to avoid a single point of failure; the maintenance hole and entrance pathways should be on opposite sides of the building and be a minimum 20m apart.

Both access providers are required to install two entrance cables in the datacenter with two entrance rooms.
One must go to primary entrance room and another one goes to a secondary entrance room and both the primary and secondary entrance room must have conduits from each other to provide flexibility.

Ensure that there are multiple access providers with multiple diverse pathways from the access provider to the datacenter for the business continuity.

The datacenter team must ensure that its services are provisioned for from different access provider central offices and the pathways to these central offices are diversely routed and this route pathways should be physically separated by at least 20m at all points along their route.

The datacenter admin team should make sure that access providers install circuit provisioning equipment in both entrance rooms so that circuits of all required types can be provisioned from either room.

The access provider provisioning equipment on both entrances must be the same and one room’s equipment should be up if other room’s equipment goes down.

The distance between two entrance rooms must be 20meter and it must be in different fire protection zone.

A secondary main distribution area (MDA) provides additional redundancy, but at the cost of complicating administration. Core routers and switches should be distributed between the two

MDAs. Circuits should also be distributed between the two spaces.

Main and secondary distribution area must be placed in different fire protection zone and both of them have to get power from different power distribution units and from different cooling equipment. Redundant backbone cabling protects against an outage caused by damage to backbone cabling.

Redundant backbone cabling may be provided in several ways depending on the degree of protection desired.

Backbone cabling between two spaces, for example, an HDA and an MDA, can be provided by running two cables between these spaces, preferably along different routes.

If the data center has redundant MDAs or redundant IDAs, redundant backbone cabling to the HDA from each higher-level distributor (IDA or MDA) is not necessary.

The routing of cables from the HDA to the redundant IDAs or MDAs should follow different routes. Horizontal cabling to critical systems can be diversely routed to improved redundancy. There should be enough attention not to exceed maximum horizontal cable lengths when selecting paths.

Critical systems can be supported by two different HDAs if maximum cable length restrictions are not exceeded. The two HDAs should be in different fire protection zones for this degree of redundancy to provide maximum benefit.

Revision #1
Created 6 October 2025 09:04:00 by RISA
Updated 6 October 2025 09:04:54 by RISA