

**Darwin Costa**  
DE-CIX  
LATAM & AFRICA



**INTRAREDE:**

*Panorama, Infraestructura e uso dos PPTs nos últimos meses*

18 de Novembro 2020



*Where networks meet*

[www.de-cix.net](http://www.de-cix.net)

*Like others, DE-CIX has special responsibilities, amplified by its position as the largest neutral interconnection ecosystem globally*

- Dallas
- New York
- Istanbul
- Dubai
- Lisbon
- Madrid
- Marseille
- Palermo
- Chennai
- Delhi
- Kolkata
- Mumbai
- Berlin
- Dusseldorf
- Frankfurt
- Hamburg
- Munich
- Johor Bahru
- Kuala Lumpur
- Singapore
- Moscow
- St Petersburg



**2,000+** ASNs  
Connected networks

**25** IXs  
14 Interconnected

**500+**  
Access Points

**80+**  
Countries

**58+** Tbits  
Connected capacity

*Where networks meet*

[www.de-cix.net](http://www.de-cix.net)

*DE-CIX service model ensures full flexibility & resilience*



**One  
access**

- ▶ Multiple services on one access
- ▶ Book services as demanded
- ▶ Better monetize the DE-CIX connection



## Very special outcomes & initiatives

**Support & back you up in your mission and efforts on the frontline, everywhere:**

- **Up to +50% increase of average traffic** at DE-CIX's hubs within a few weeks
- **8 traffic peak records** broken (DUS, FRA, HAM, MUC, MRS, MAD, DFW, DXB)
- Traffic more than **doubled for streaming and collaborative** tools
- **Accelerated processes** (ordering & provisioning)
- **Backed up by government(s) & public institutions** as critical infrastructure and crucial for different industries & public sectors e.g. education

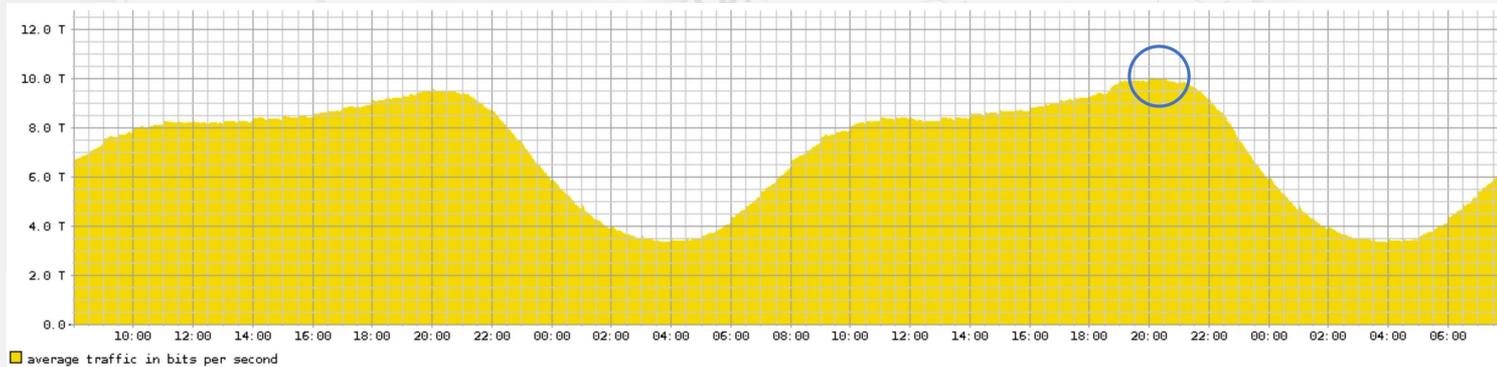
**DE-CIX strategic choices on services & geography have been validated by the crisis:**

- **Robustness and resilience** of DE-CIX platform and ecosystem
- Adequacy and flexibility of DE-CIX **service model**



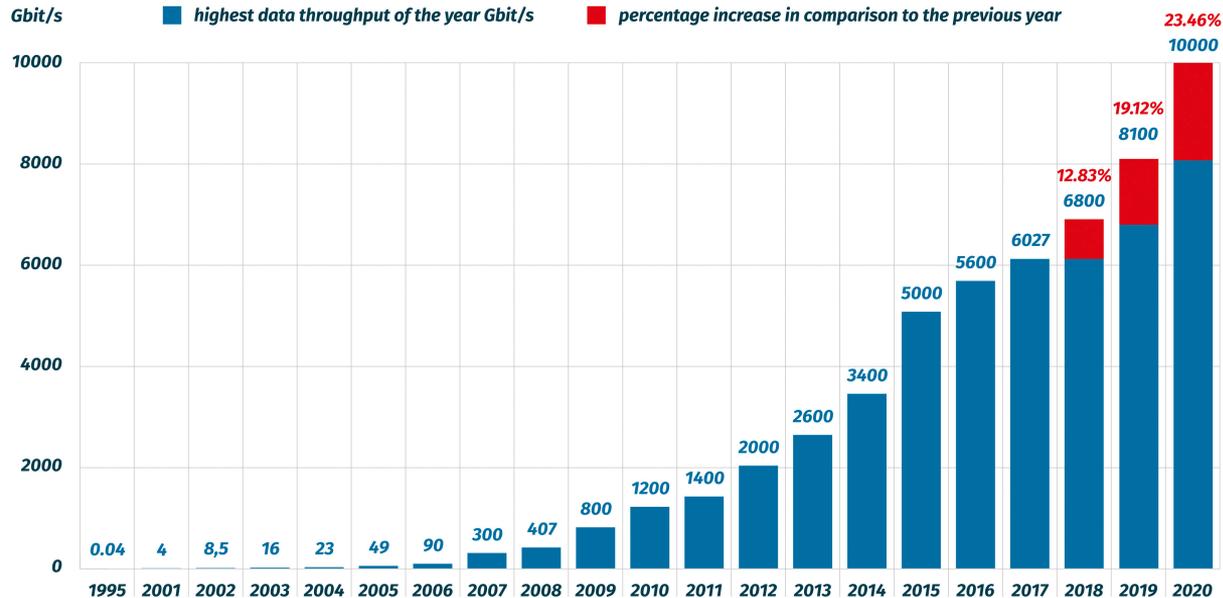
# Major Outcome

10006.01 G - reached at 2020-11-03T20:15+01:00



# Outcomes over time

## Data traffic DE-CIX Frankfurt



# *Signals of changes in the global interconnection ecosystem?*

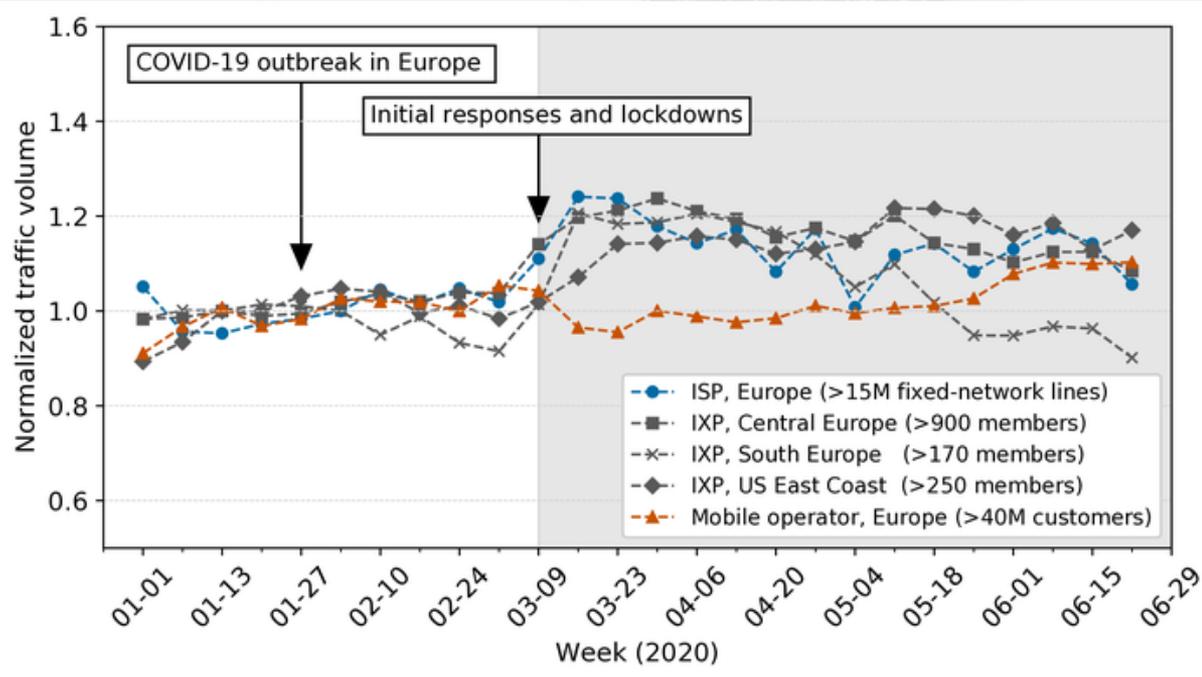


# Traffic patterns @ DE-CIX – General hits & shifts

Before	Since the crisis
+10-50% peak increase per annum	+10-50% average increase traffic in days
Steady growth, new peaks in fall & winter (sometimes live events, updates, or releases)	New peaks correlate with lockdowns (exact dates varying by region)
Stable distribution of traffic/applications (e.g. video, CDN content, web)	Extreme rise of some applications (e.g. collaborative tools, gaming, video)
Diurnal cycles, morning & night low	Significantly more traffic during the days, higher amplitudes, and higher peaks

**Same outcome at all DE-CIX hubs**  
**Different boosters of traffic**  
**Similar explanatory factors**

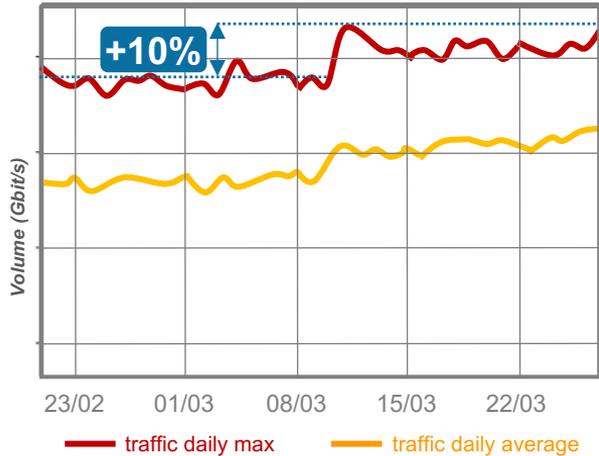
# Traffic patterns in Europe



Source: [https://labs.ripe.net/Members/oliver\\_gasser/the-lockdown-effect-implications-of-the-covid-19-pandemic-on-internet-traffic](https://labs.ripe.net/Members/oliver_gasser/the-lockdown-effect-implications-of-the-covid-19-pandemic-on-internet-traffic)

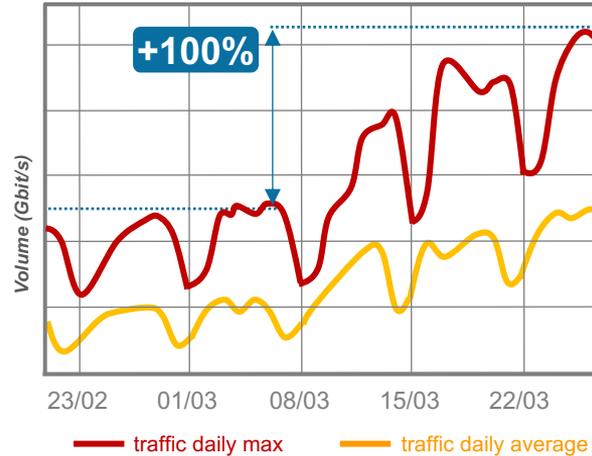
# Traffic patterns @ DE-CIX – example: DE-CIX Frankfurt

**Traffic**  
(by volume)



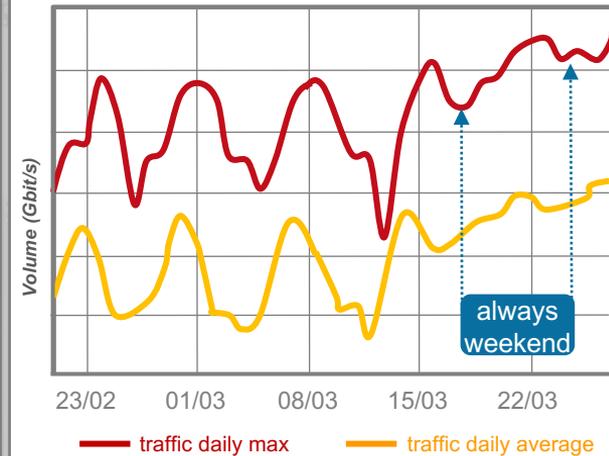
- traffic increase of 10%

**Collaborative working**  
(by volume)



- collaborative tools (e.g. Skype, Webex, Zoom, Teams...)
- 100% increase in traffic
- more traffic during the week

**a Gaming provider**  
(by volume)



- a gaming provider with target group of younger people: every day is weekend!

# Traffic patterns @ DE-CIX – example: UAE-IX **Dubai**

**+40%**  
peak traffic increase



**+400%**  
peering partners increased capacity

## Switch of business traffic

More online gaming & content consumption



Home schooling & Home office

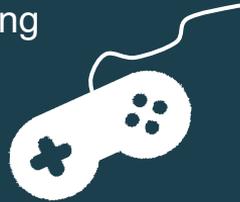


Collaborative tools



**+100%**

Gaming



**+50%**

Video streaming



**+40%**

Collaborative tools



# Possible impacts on the Internet infrastructure

## In the short term

Internet backbone **can absorb fast-growing demand**

Application / use case **specific traffic patterns with “extreme” peaks**

**No strict differentiation between business and residential** usage and networks – uncommon traffic relations

## In the mid to long term

Incremental capacity deployed over last weeks will be **used by newly initiated projects**

**Shift in traffic patterns** in the Internet, extreme situation a glimpse into the future (?)

Internet architecture must support certain **quality guarantees – multi-services interconnection** (e.g. Cloud)

# *DE-CIX Business Continuity Plan & Outlook for 2020*



**24/7**



DE-CIX

# DE-CIX Business Continuity – Staff & Processes

1. Extended availability via 2<sup>nd</sup> shift to accelerate provision of services for new orders
2. Customer Service reachable in emergencies as usual 24/7 anywhere
3. DE-CIX global interconnection ecosystem is largely automated
4. NOC operations and rest of team in home-office to ensure health & continuity



# DE-CIX Business Continuity – Partners & Institutions

## In permanent contact with partners

- *DC partners* to access sites
- *Carrier partners* to ensure connectivity
- *Hardware vendors* to secure timely delivery & stocks

## DE-CIX treated as critical infrastructure worldwide

- In contact with different local authorities
- *Empowerment by local authorities* to guarantee access to our infrastructure

# DE-CIX Business Continuity – case study

## UAE-IX Dubai – Microsoft upgrade



**Request for  
upgrade to 200G**  
(from 40G)

**Contractual agreement  
& order**

**Go live  
& traffic shift**



**11 march**

**+1 working day**  
Thursday - Close of business

**+ 6 working days**



Government  
announced home  
schooling measures

Thursday... is start of the  
weekend in Dubai.  
Covid-19 specific restrictions

Official start day of home  
schooling measures. All  
via peering

***Thank you  
& stay healthy!***



*Where networks meet*

[www.de-cix.net](http://www.de-cix.net)