



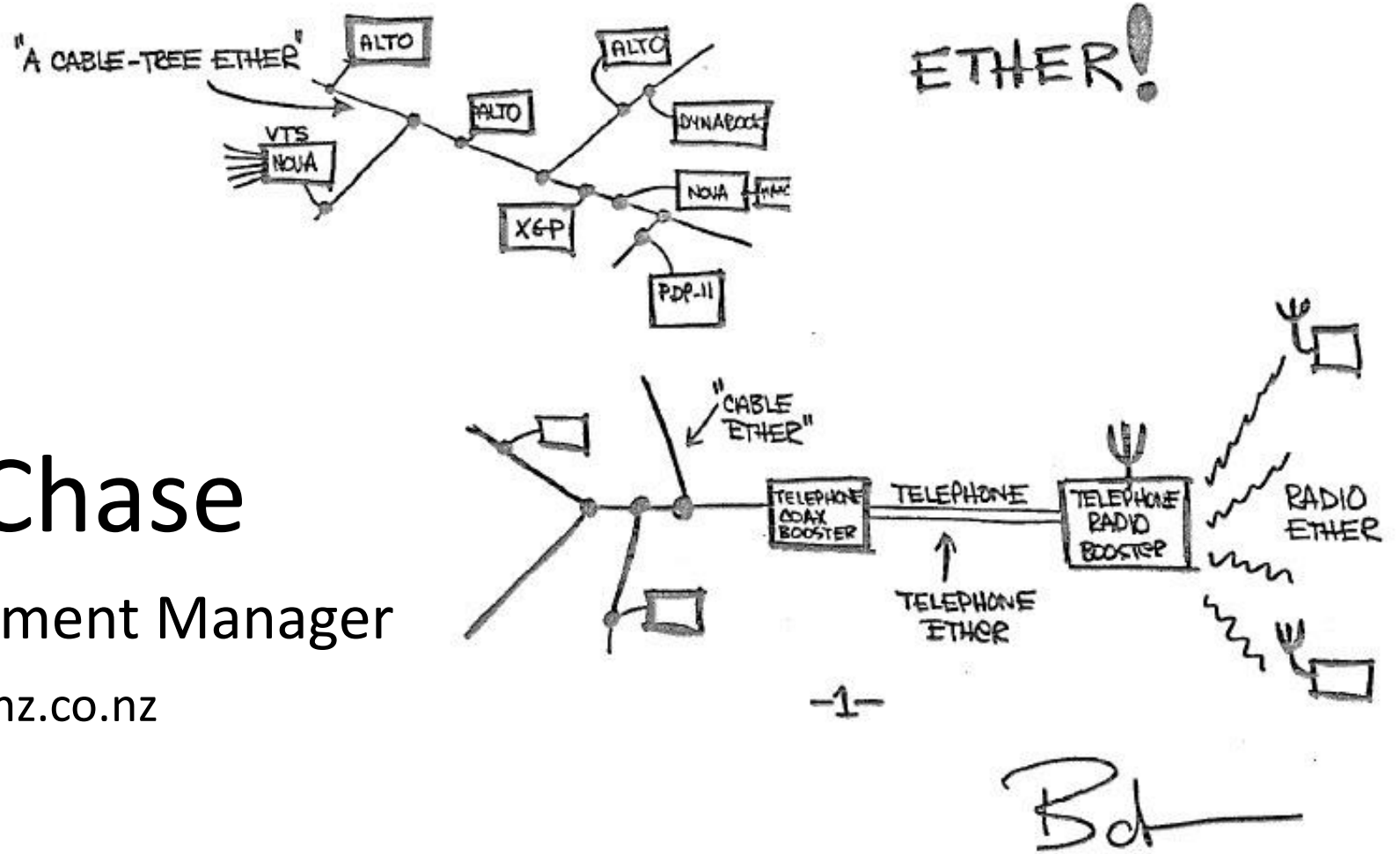
REANNZ

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https://en.wikipedia.org/wiki/Great_Molasses_Flood#/media/File:North_End_molasses_tank.jpg



10,886 metric tons

2,300,000 US gal

(8,700 m³; 8,706,447 liters)

35 mph (56 km/h)

killing 21 and injuring 150

Latency (or RTT -Round Trip Time)

Latency is a way to measure speed.

Ironically, bandwidth isn't, despite the fact that *everyone* refers to bandwidth as speed.

Using a pipe as an example):

- Bandwidth has to do with how wide or narrow a pipe is.
- Latency has to do with the contents of the pipe; how fast it moves from one end to the next.

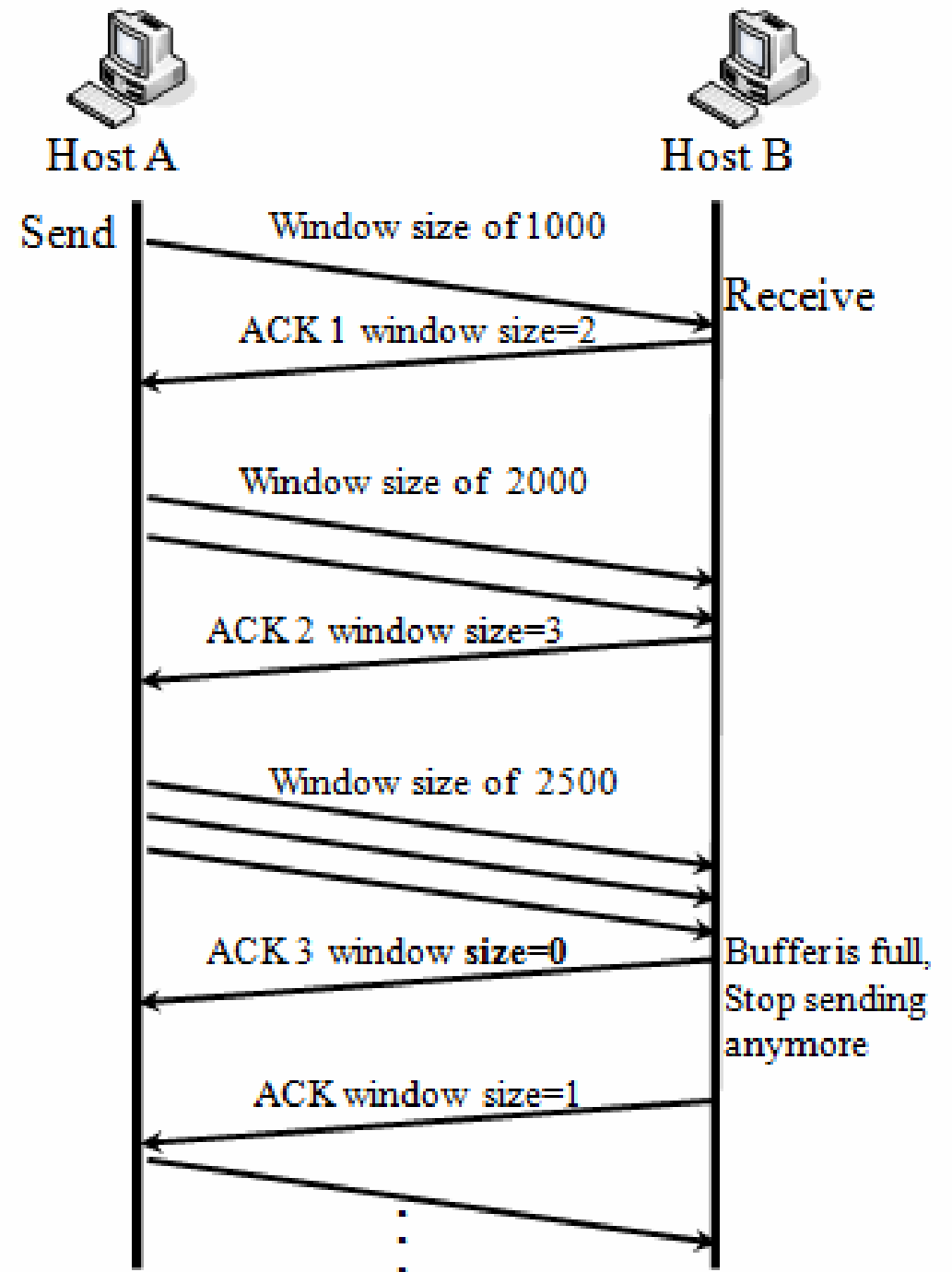


Photo by [Samuel Sianipar](#) on [Unsplash](#)



Photo by [Pascal van de Vendel](#) on [Unsplash](#)

Buffer/window size

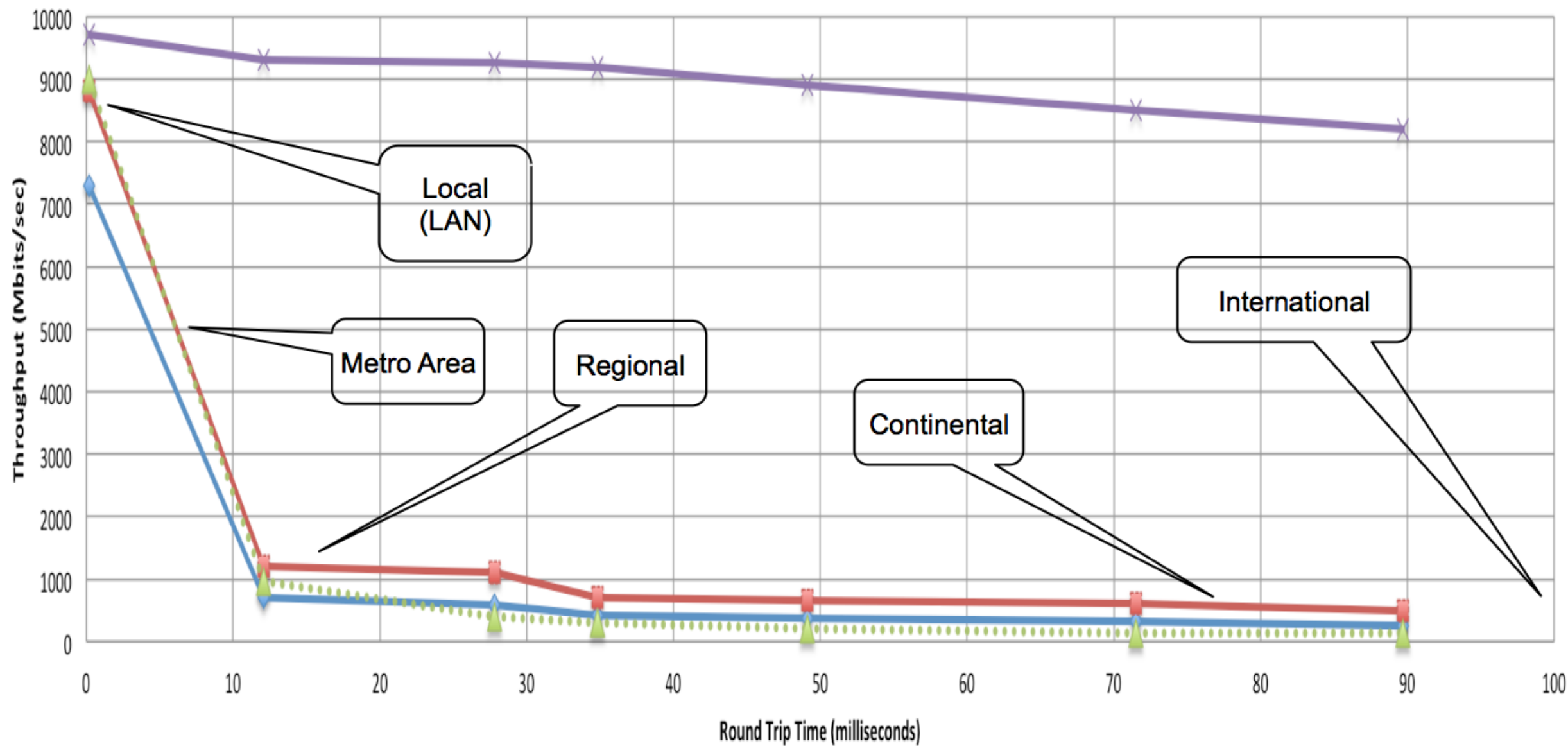


When TCP encounters loss, it has to recover - but it starts with a small window and opens it back up again over time.

The longer the latency, the longer the control loop is for doing this.
So, all other things being equal, the time necessary for a TCP connection to recover from loss goes up as the round-trip time goes up.



Throughput vs. increasing latency on a 10Gb/s link with 0.0046% packet loss



Measured (TCP Reno)

Measured (HTCP)

Theoretical (TCP Reno)

Measured (no loss)

Packet loss

Network Congestion

Software Bugs

Problems with Hardware

Bad Security Stuff

Good Security Stuff

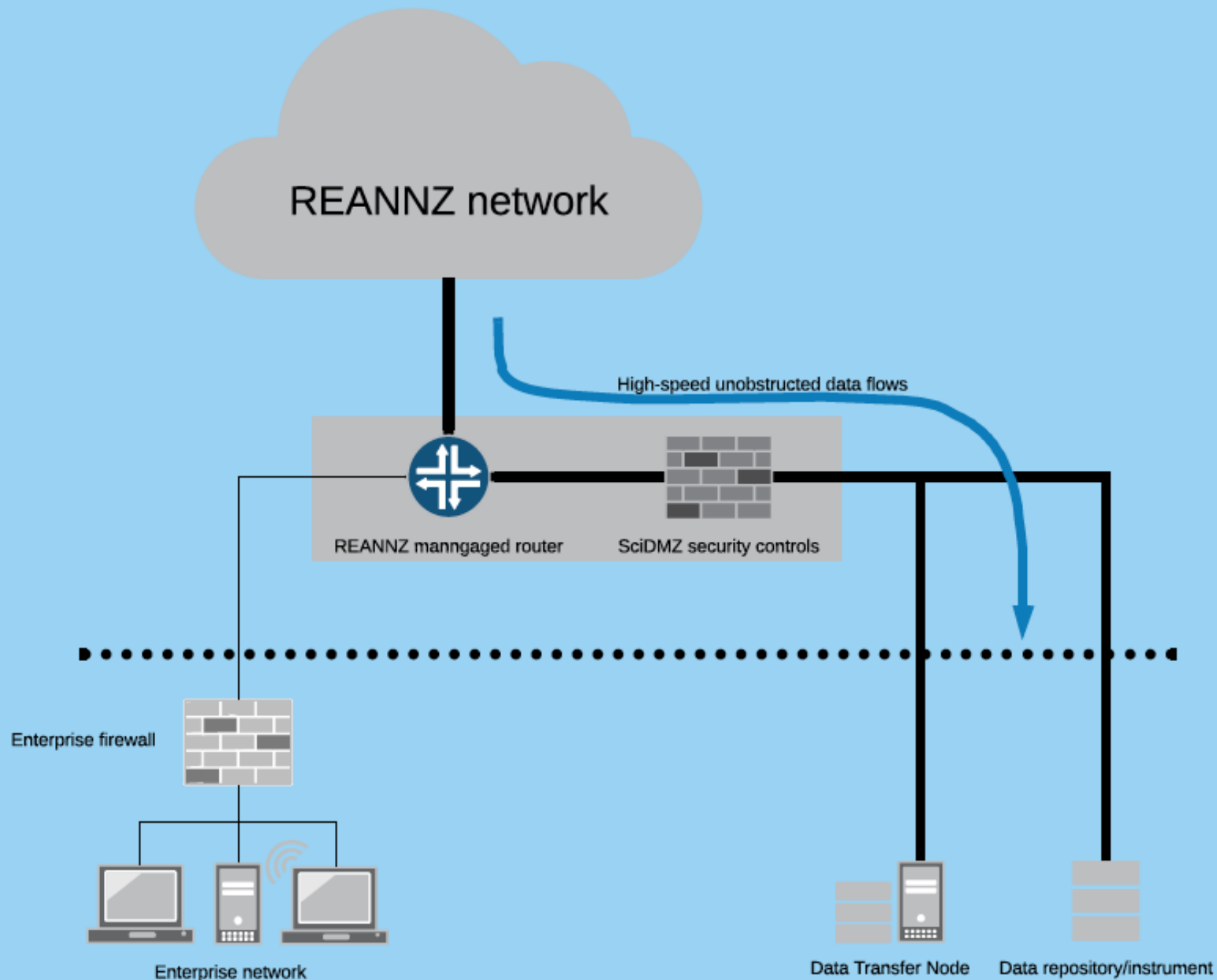


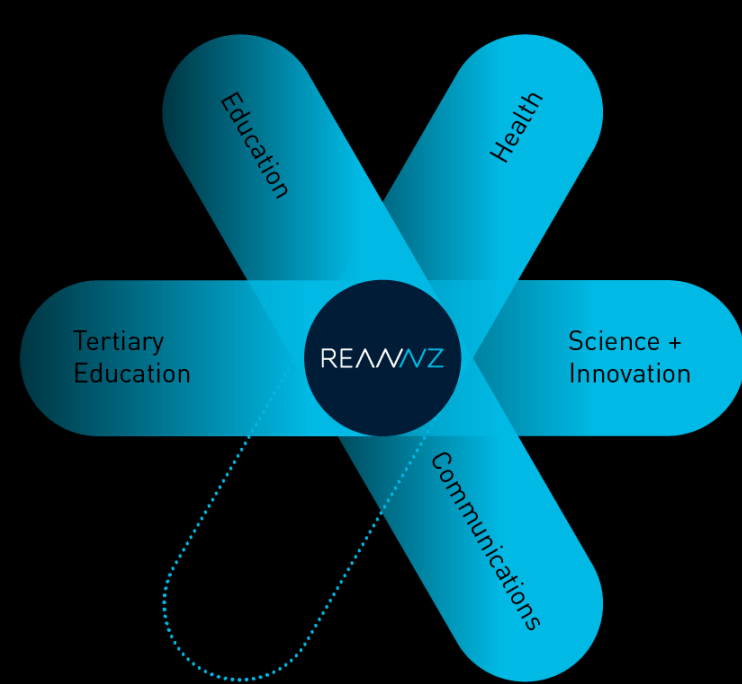
Are you even parallel bro?

Break the file into smaller pieces that are transferred in parallel



Science DMZ





NeSI
New Zealand eScience
Infrastructure

Here to help!



HUGE MOLASSES TANK EXPLODES IN NORTH END; 11 DEAD, 50 HURT

Giant Wave of 2,300,000 Gallons of Molasses, 50 Feet High, Sweeps Everything Before It—100 Men, Women and Children Caught in Sticky Stream—Buildings, Vehicles and L Structure Crushed

35 STATES ON DRY LAW LIST

Amendment Ratified by Five Yesterday—One More Needed—Predict Nation Dry July 1

SECRECY IN PEACE CONGRESS

WASHINGTON, Jan. 15.—Legislators of 35 States today have required three-fourths vote to ratify the prohibition constitutional amendment. Several State Assemblies now in session are expected to take action tomorrow, with a probable ratification vote in the near future. The amendment, which will be the 21st to the Constitution, will prohibit the manufacture, sale and transportation of intoxicating liquors.

France, Italy and Japan Outvote U. S. and Britain

PARIS, Jan. 15.—The Associated Press.—The question of whether the League of Nations should be open to the ratification of the peace treaty, the settlement of which has been long pending, was brought to a vote today when it was announced that an agreement had been made to the public to a daily official committee, and that a preliminary agreement had been reached among the delegates not to proceed on the League of Nations.

CHILDREN NEED

WASHINGTON, Jan. 15.—The Associated Press.—The question of whether the League of Nations should be open to the ratification of the peace treaty, the settlement of which has been long pending, was brought to a vote today when it was announced that an agreement had been made to the public to a daily official committee, and that a preliminary agreement had been reached among the delegates not to proceed on the League of Nations.

BOSTON TAVERN

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INTEREST JAN. 18

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BLACKSTONE SAVINGS BANK

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DINE AT HEALY'S

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HENRY F. MILLER & SONS PIANO CO.

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FINE PIANOS

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SHORTHAND

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NORTH END PARK PLAYGROUND

BOY'S STORY AID TO MRS. LEBAUDY

Messenger Left Mansion Before the Shooting—Life in Danger

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

L. C. COUGH DROPS

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

WAKEN'S STATE CASE

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

Every \$20 Overcoat \$14

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

QUINCY CHOICE

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

Interest Begins Jan. 23

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

RECENT DIVIDENDS

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

CAMBRIDGE SAVINGS BANK

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

COUNTRY HOME

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

CASTLE SQ. THEATRE

NEW YORK, Jan. 15.—The most important story of the day is the story of the boy who was shot in the back of the head by a messenger who was leaving the mansion of Mrs. Lebaudy.

Search for More Victims During the Night

No Escape From Gigantic Wave of Fluid

INTERNAL EXPLOSION WAS CAUSE, SAYS STATE CHEMIST

It became known last night that W. L. Wedger, State police chemist in charge of explosives, had reached the positive conclusion that the disaster instead of being due to a collapse of the great tank was caused by an internal explosion. Mr. Wedger is investigation is understood to have found that the tank was filled with molasses and that the explosion was caused by a leak in the pipe leading to the tank.

Mr. Wedger after a careful study of the matter is reported to have reached the conclusion that in a great tank of molasses so heated there could be generated a mixture of air and gas that would be as explosive as the same amount of air and gasoline. That the heavy section of the elevated railroad structure resembled like an eggshell are other considerations linked with the conclusions of Mr. Wedger. That window in the neighborhood remained intact is explained by the fact that the explosive waves in such a blowup would be different in their effect on surroundings than would be the case if dynamite exploded.

Thus it is understood that Mr. Wedger's formal report will be that the disaster was due to an internal explosion.

A 50-foot wave of molasses—2,300,000 gallons of it—released in some manner yet unexplained, from a giant tank, swept over Commercial street and its waterfront from Charter street to the southerly end of North End Park yesterday afternoon.

Ensuing in its sticky flood more than 100 men, women and children; crushing buildings, teams, automobiles and street cars—everything in its path—the black, reeking mass slipped against the side of the buildings facing Copp's Hill and then swished back towards the harbor.

Eleven persons—a woman, a girl and nine men—were known dead at midnight. More than 50 injured were in hospitals and at their homes. Some of them may die. Dead horses, cats and dogs had been carried away in team after team.

Boston's only trolley freight terminal was in ruins. Most of its big steel trolley-freight cars were destroyed.

Continued on Page 12—First Col.

News of North End disaster on pages 8, 14, 15 and 16

FAIR

Forecast for Boston and vicinity—Fair, with occasional showers, and moderate temperatures. Wind variable.

HIGH TIDE TODAY

SUN RISES 7:10 AM. MOON SETS 11:10 PM. High tide at 1:10 PM. Low tide at 7:10 PM.

TODAY'S ANTIMONY

Antimony is a metalloid element, symbol Sb, atomic number 51. It is a brittle, silvery-white metal that is resistant to corrosion.

YANKEES' FAVORITE

Yankees' favorite is a brand of beer brewed by the Boston Beer Company. It is a light, refreshing beverage that is popular among fans of the New York Yankees.

Pants at a Price

Pants are a staple item of clothing for men. They are typically made of cotton, wool, or synthetic materials and are worn over a shirt and underwear.

Every \$15 Overcoat \$7.90

Every \$15 overcoat is now only \$7.90. This is a special offer from the Cambridge Savings Bank, which is holding a sale on its overcoat department.

FORD OWNERS

Ford owners are encouraged to visit the Ford Motor Company's website for the latest news and information about their vehicles.

CLARK'S

Clark's is a well-known brand of shoes that are known for their quality and durability. They are available in a variety of styles and colors to suit different tastes.

Thank you!

Education

Health

Tertiary
EducationScience +
Innovation

REANNZ

Communications

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