

Here's a well-organized table format of PostgreSQL constraints with examples:

Constraint Type	Description	Example
PRIMARY KEY	Uniquely identifies each row (implicitly NOT NULL)	CREATE TABLE users (id SERIAL PRIMARY KEY, name VARCHAR(50));
FOREIGN KEY	Enforces referential integrity between tables	order_id INT REFERENCES orders(id) ON DELETE CASCADE
UNIQUE	Ensures all values in column are distinct	email VARCHAR(100) UNIQUE
CHECK	Validates data against boolean expression	age INT CHECK (age >= 18)
NOT NULL	Prevents NULL values in column	username VARCHAR(50) NOT NULL
DEFAULT	Sets default value when not specified	created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
EXCLUSION	Prevents overlapping values using operators (requires extension)	EXCLUDE USING GIST (room WITH =, period WITH &&)

Constraint Actions Table (For Foreign Keys)

Action	Description
ON DELETE RESTRICT	Prevents deletion of referenced row (default)
ON DELETE CASCADE	Automatically deletes referencing rows
ON DELETE SET NULL	Sets foreign key to NULL in referencing rows
ON DELETE SET DEFAULT	Sets foreign key to its default value
ON UPDATE CASCADE	Updates foreign key values when referenced key changes

Constraint Management Commands

Operation	Command Example
Add constraint	ALTER TABLE employees ADD CONSTRAINT pk_emp PRIMARY KEY (emp_id);
Drop constraint	ALTER TABLE orders DROP CONSTRAINT fk_customer;
Disable all	SET session_replication_role = replica; (temporarily disables constraints)
Enable all	SET session_replication_role = DEFAULT;

Constraint Identification Queries

```
-- List all constraints for a table
SELECT conname AS constraint_name,
       contype AS type,
       pg_get_constraintdef(oid) AS definition
FROM pg_constraint
WHERE conrelid = 'employees'::regclass;
```

This table format provides a quick reference for all major PostgreSQL constraint types with practical examples and management commands.